The MODERN HOSPITAL

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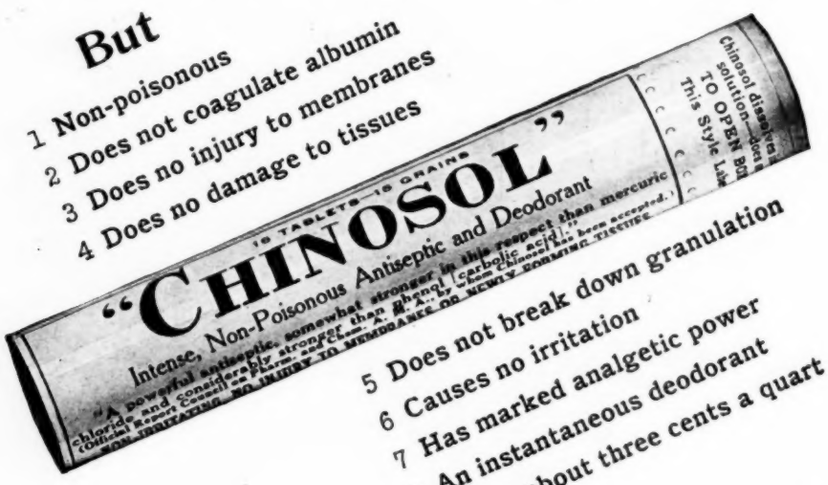

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THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical and Nursing Services

Vol. I — *October, 1913* — No. 2

PLANS FOR WORK IN THE PHIPPS PSYCHIATRIC CLINIC.

New Johns Hopkins Feature Intended for Treatment and Scientific Study of Obscure Mental Cases—Methods to Be Employed.

By ADOLPH MEYER, M. D., Director.
Professor of Psychiatry, Johns Hopkins Medical School.

THE greatest boon that could possibly come to any branch of medical work is to get opportunities to develop activity in a medical center in close cooperation with other branches of medical work, research, and teaching. Psychiatry has not had this opportunity, and for this reason undoubtedly it has remained behind so long, and has appeared to the medical investigator and medical student as an unfruitful branch of medicine. A difficult chapter of medicine poorly taught, notwithstanding the best efforts of its teachers, was bound to bring misunderstandings and discouragement, and a perpetuation of old traditions, which were largely kept up because they make the physician's ignorance less conspicuous. Popular opinion is unfortunately not founded on experience, but very largely on traditional misinterpretations, and especially on such reports from patients with imperfect insight as would rouse the sympathy of the average person, not so much for the illness itself, but for some of its consequences, and justify the aversion against hospitals. Unfortunately the hospitals themselves were for a long time run according to principles which did not make for progress. Under the critical censorship of the fiscus of the state, and to quite an extent under the guidance of men who had been attracted to psychiatry by accident rather than by deep interest in psychiatry as such, the institutions had been allowed to grow so excessively and with such a small development of the medical staff that there was not very much done there to counteract the feeling of the medical profession and the public that continually reiterated the expression of hopelessness, and more or less condemnation. Even those sincerely interested in the progress of psychiatry had to experience many rebuffs, such as the fact that, in the greatest foundations of the modern day in the direction of research and investigation, psychiatry was always left out, and that, in even such a large enterprise as the Rockefeller Institute, the otherwise very full and comprehensive sketches drawn up in the addresses at its opening contained no word concerning the large field of psychopathology. A change has at last come, and that through the foundation, either close to medical schools or within the medical schools, of psychiatric clinics, a type of institution the first example of which was founded at Ann Arbor, Mich., by the late Dr. Herdman, professor of neurology, at a time when his colleagues in psychiatry claimed that the state would not be mature for such a move for at least twenty-five years; and then the Psychopathic Hospital in Boston, built by the state, under the direction of Dr. Owen Copp, and brought into close relation to Harvard by its location near the medical school and the Peter Bent Brigham Hospital, and through the appointment to its directorship of Dr. E. E. Southard, professor of neuropathology of Harvard Medical School. Even before the Boston Psychopathic Hospital had taken definite form in a legislative act, Mr. Henry Phipps gave his donation to the Johns Hopkins Hospital and University to found a psychiatric clinic, an institute the need of which Professor Osler had well outlined in his famous farewell address before he left Johns Hopkins University.

The first conception of such clinics no doubt was founded on the general idea that the beginning of mental disease should receive the same type of medical care as the general hospitals could afford. The extensive introduction of the so-called rest cures in the private wards of the hospital, and the theories of autointoxication and the no doubt

Fig. 1.

somewhat one-sided reports of various specialists of cures of reflex psychoses, had created a picture of what the psychiatric clinic might be, somewhat different from that in the minds of those actually engaged in psychiatry exclusively. To this was added the general recognition that the declaration of insanity which was demanded for the admission to most institutions for the treatment of psychoses was, as a rule, a painful deterrent and something of a stigma to those suffering and to the family, and, therefore, a hindrance to early care and treatment. A wide range of cases really had hardly ever come within reach of either the physician who worked in general hospitals or of the psychiatrist who worked in the special institutions for the insane. To the student of these questions it was perfectly plain that a much wider range of opportunities had to be furnished than either of the extreme representatives of internal medicine or of psychiatry in the older sense would have ventured to foresee. For teaching and for actual service of a locality it appeared necessary to make provisions both for the light cases and simple forms, and for those cases which so far had fared equally badly on account of the outspokenness of their trouble and the difficulty of handling the initial stages of their attacks. Neither type had so far been welcome in general hospitals, partly on account of certain risks, like risks of suicide, and partly on account of the difficulty of management, and the occasional transgressions of hospital rules by noisiness or other complicating disorders of conduct. Those who made the plans of the Henry Phipps Psychiatric Clinic had as far as possible to meet these complexities and difficulties. It appeared obvious that, both for teaching and in order to shape a really useful plant which could be a model of service to any locality or community, it was essential to provide facilities for the admission of *any* type of mental disorder from the very lightest to the gravest forms, which formerly were thrust into jails and lock-ups until they could be transferred to the padded rooms or cells of the asylums. It is among these cases that the greatest number of unnecessary deaths and abuses do take place, and it is absolutely essential that medical students and physicians trying to get acquainted with psychiatry must have an opportunity to learn to handle these cases and the situations they involve in the best possible manner. What we need in psychiatry is not an additional emphasis of the idea of stigma and contrast between special hospitals and the asylums, but an assurance to the public that cases with mental disorders, no matter how slight or no matter how grave, can find proper care and treatment in modern hospitals; and that the best possible attention to such cases, at as early a date as possible, is the vital issue. On the other hand, the internal organization of the hospital and of its workshops demands a much wider range of oppor-

Fig. 2.

tunity than was usually bestowed on the internal medicine, or surgical, or gynecological, or other departments of hospitals and medical schools. The course of anatomy and of physiology and general pathology are to a remarkable extent devoid of instruction in the very things which are most closely needed in psychiatric work. The conse-

quence is that at least for a time the psychiatric department will have to work out its own salvation in laying the foundation for its work, teaching, and investigation. For various reasons even neuropathology had prospered rather scantily in the medical course so far, and the teacher in neurology had to work rather single-handed in his inevitably rather complex field, and psychology was practically an unknown quantity in the medical course, as indeed we must admit that it is hardly as yet developed along the lines most needed by the physician and by those basing their psychiatric work on biological principles.

In the planning of the building it was necessary to take into consideration not only the immediate opportunities and problems, but also the near future in the development of psychiatry and psychopathology. The result was a set of plans which incorporate the best possible facilities of accommodation for a wide variety of disorders from the simplest psychopathological disturbances which nobody would want to associate with the traditional ideas of mental disease to the outspoken mental disturbances; and, on the other hand, laboratory and research facilities in the internal medicine issues of mental disorders, and in the neuropathological work and also in psychopathology.

The provisions for the patients are, in the first place, an out-patient department, with a waiting room, which is in part also used for occupation classes and for the social service workers, and examination rooms, and a demonstration room for classes and instruction. For the actual clinic—that is, the hospital division—we have to provide an admission ward, facilities for the care of specially excited cases, then a semiquiet ward, a quiet ward, and a special ward for such cases as one would not care to bring into contact with the more decidedly mental disorders or mentally disturbed patients. In addition to these divisions the needs of the hospital and the great expense of the running of the clinic make it desirable to provide for a number of exclusively private suites and rooms.

The relatively small grounds left for the psychiatric clinic necessitated the erection of a multistory building, as nearly fireproof as any construction could be made. The front of the building looks almost directly to the north, and only few of its rooms would ever get any sun. This side was, therefore, almost exclusively devoted to administrative and laboratory and staff quarters, and the basement to the out-patient department. From either end of this north front a pavilion of four superimposed wards extends to the south, the basement containing the hydrotherapy provisions, mechanotherapy, and some orderlies' rooms; and the first floor, the admission ward extended into a small division for more excited cases; the second floor providing for ten semiquiet cases; the third floor for about sixteen quiet cases; and the fourth floor for eight private cases on each side of the house. While this plan necessitated a repetition of the housekeeping provisions for several floors, it seemed to be the only method of securing adequate and sufficient segregation of different types of cases. The top floor was reserved for the large recreation hall and for roof gardens.

A glance at the ground plan of the second floor gives the quickest orientation concerning the general organization of each ward. The unit consists of a ward with eight beds, two single rooms, and a day room. One room contains two tubs for continuous baths. There are further a toilet and lavatory, the utility room, a nurses' room, clothes room, an occupation room, and a physician's examining room. The first floor, with the admission ward, contains, first, an examination room for the physicians, a small waiting room, and a cleansing bath, a utility room and pantry, a clothes room, and a nurses' room, a toilet and lavatory, a single room for a patient, and then the ward for eight beds. Beyond that, instead of the day room, there is a division consisting of three single rooms and a small water section; and on the other side a small corridor opening into the court, and a bath room with two tubs for continuous baths; next to this, a small room with one tub for continuous bath and closet, adjoining a room for a private patient. The end of this ward is reserved for a small day room for the cases of this division. It is over this extension of the first floor that the second floor ward gets a fairly large open veranda or terrace connected with its day room. The third floor is arranged in a way similar to the second floor, with only the difference that the room for the tubs for continuous baths is replaced by a third single room for a patient, and the ward with the eight beds is subdivided by partitions so as to give a certain amount of privacy to each individual bed. Moreover, beyond the day room there is no terrace on this floor. The southern exposure of the middle part of the building is used as follows: on the first floor are the reception rooms; on the second floor rooms for the head nurse and her first assistant; on the third floor rooms for a small division for special cases, with three or possibly five beds, connected with a bath room. The fourth floor is taken up altogether with rooms and suites of rooms for private patients.

The reception ward must always provide for two special types of emergencies—viz., that occasion-

ally a case of mental disorder proves to be a disturbance precipitated by an acute infectious disease, possibly requiring quarantine, which should not have to close the whole first floor, but only one-half of it; the other point is that patients of a very excited character should not be taken through a whole ward of eight beds in order to reach a relatively secluded room. For these two reasons the excited division of the admission ward, if we may use that term, has been made accessible by a special entrance through the court, and, since this arrangement necessitated a covered path from the reception room to this further division of the admission ward, Mr. Atterbury de-

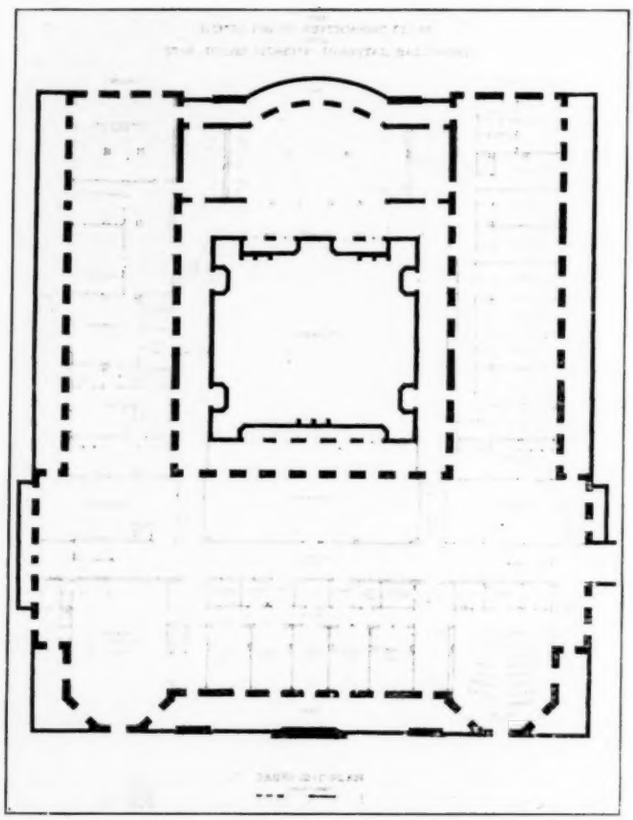


Fig. 3.

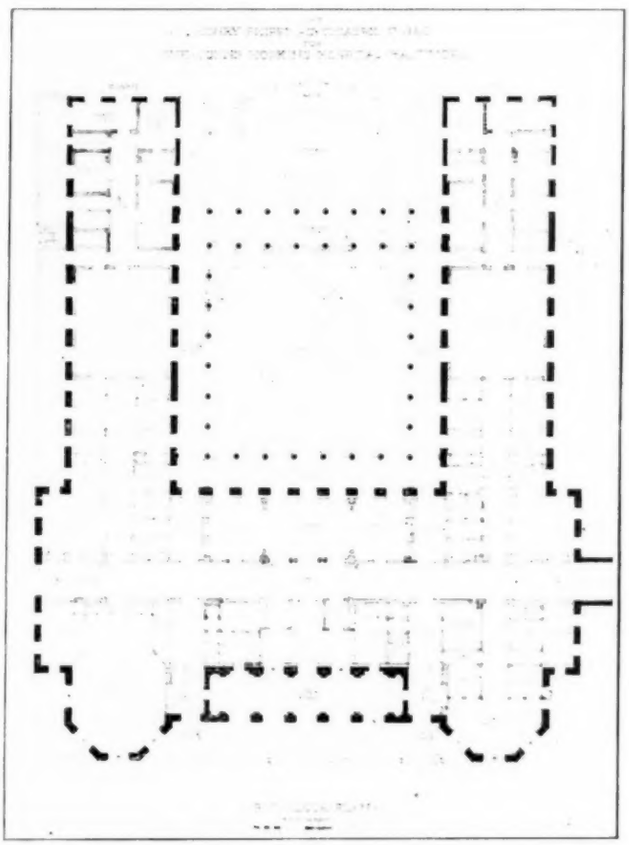


Fig. 4.

vised, very ingeniously, the effect of a cloister, which embraces a small garden and ends on a terrace which is really the roof of the mechanotherapy, and leads beyond that to the garden extending to the wall against Jefferson street, in which two attractive pavilions serve as a place of outing for groups of patients.

The clinical service is officered as follows: the director has an associate, Dr. Charles Macfie Campbell, who takes charge of the direction of the clinic in his absence. The resident staff consists of the resident physician, Dr. David K. Henderson; two assistant resident physicians, Dr. Ralph Truitt and Dr. Edward Kempf, and five interns. This staff will further be assisted by the heads of three laboratory departments; in the first place the laboratory division of the internal medicine problems, in charge of Dr. Sidney Miller, a large laboratory with two side rooms on the east end of the ground floor. The whole north side of the third floor is occupied by the neuropathological laboratory on the west side and a psychological laboratory on the east side, with eight research rooms situated between the main laboratory spaces. The head of the neuropathological laboratory will be in charge of the clinical issues of neuropathology as well as the distinctive histological and physiopathological experimental work of the neurological laboratory. The psychologist, who for some time probably will be a trained psychologist, without necessarily having a medical education, but who as soon as possible will be a physician with psychological training, will in a similar way have charge of the laboratory and its investigations, and also the psychological aspects of the clinical problems and the standardization of the psychological clinical work.

The second floor is devoted to a large library on the east wing of the north front, and the director's rooms, consisting of two offices, and two research rooms, and the lecture room complex, consisting of the lecture room proper, a waiting room,

chart room, projection room, and a draughtsman's room.

The entire clinic is an intrinsic part of the Johns Hopkins Hospital and Medical School. The food is furnished from the general kitchen. The nursing force is to be provided for in the general nurses' home. The nurses are partly nurses trained at the Johns Hopkins Hospital, with experience in various institutions for mental cases, and partly nurses who have had their training in private institutions of the United States or abroad.

The type of cases to be admitted will naturally depend to some extent on the demands made on the clinic. In general it is our hope that we shall be able to have a sufficient number of free beds to be able to make the hospital available for well circumscribed districts in the neighborhood which can be subjected to a sociological study, and can give an opportunity for both the study of the genealogy and heredity of the cases and also for the after-care and preventive work. We want to warn especially against sending patients to the hospitals without previous arrangements. The relative smallness of our accommodations makes it absolutely necessary that we should use careful judgment in the choice of the type of cases considered suitable. In the main we shall follow the principle that we are willing to accept almost any type of case for study, observation, diagnosis, and the outlining of the plan of treatment—that is to say, for a period of observation of a week or two—and that from these numbers we shall select those cases promising most from intensive treatment.

The clinic does not in any way want to form a fundamental contrast to the already existing helps in the care of mental diseases. It aims to be a valuable supplement, with the best possible facilities, and work conducted under the beneficial influence of continual use in teaching, in discussion, and under the eyes of colleagues working in the various specialties that have to be applied in psychiatrical work. It must do its share to do away with the widely spread notion of the stigma of insanity, not by making itself appear as something aloof of actual mental disorders, but by showing that any kind of mental disorder receives very intense and well-directed work, and not merely asylum care and shelter.

Among the most important effects of the working of such a hospital we have to count the opportunity it affords to the medical student, and to some extent to post-graduate workers, to get a first-hand experience with the way mental cases are studied and treated. It is not fair to leave this whole question to untrained common sense. Psychiatry really has so many perplexities and difficulties, and also adequate methods to meet them, that it would not do to leave these conditions any longer to the guessing and mere native ingenuity of physicans and of lay persons. To spread a knowledge of these facts we must have opportunities to get actual practice in the wards and their laboratories and in research. This is as much needed in psychiatry as it is in obstetrics, a field in which nobody would think of being able to get all the practical information merely from books or from didactic lectures. It is very much to be hoped that before so very long physicians who are to be given the license to work on mental cases should have to demonstrate that they have actually studied and treated a certain number, at least a dozen or two dozen cases, personally and completely under adequate supervision, before they are allowed to pass on mental disorders in the form of commitment or to take charge of the treatment of such cases.

NOTES.

1. I realize that there is a strong desire for hospitals exclusively for "borderland cases." While I can understand what leads to this desire, practical experience in psychiatry demonstrates to me a rather different need. It is much less essential that we should pay attention to the more or less secondary and irrelevant feelings than to the actual medical adjustment of the troubles with which the patients come to us. The average hospital acts on the principle that a patient who ceases to cooperate well should be discharged and sent elsewhere. If we made our criterion of admission that of absolute submissiveness, we should have to eliminate many of those cases who today fare very poorly, but who are not at all less hopeful and grateful patients in the end for having perhaps gone through a somewhat noisy and objectionable phase. The noncompromising and inconsiderate banishment of just these cases seems to me to be at the bottom of the bulk of legislation which has given an official stamp to the so-called stigma. It is unfortunate that even physicians, owing to the paucity of their information in psychiatry, are very apt to speak volubly of this issue of stigma and to contrast the cases with hereditary disposition as stigmatized and those of subsidiary organic or external causation as free of the stigma. As far as my experience goes, the line is drawn without such distinction by the average public. The mere fact of a declaration of insanity constitutes the stamp of "craziness," and that in turn the notion of incurability or of a fundamental unreliability of the make-up of the personality. On the part of physicians we not infrequently find the idea that the cases due to

extraneous causes are more recoverable and therefore more fit for general hospital treatment, which, however, is by no means the case. Moreover, it is worth while remembering that duration is not a safe index. Twenty-five percent of those who recover from mental disorders to a level of their previous earning capacity do so after a duration of their disease of over one year. Neither the mere fact of mental disorder, nor the duration, nor even the hereditary character, should provoke the idea of stigma, because many of the hereditary disorders are eminently recoverable. It is more probably kept alive by the fact that quite unnecessarily many states take for granted that a jury, or at least a court, is to decide whether a patient shall get the proper care, including protection against himself. The idea of stigma would be much lessened if the matter of treatment of mental cases were left in the hands of sufficiently trained physicians—like any other issue of quarantine. In a few states all that is needed is the certificate of two physicians handed to the superintendent of the institution, without any requirement of sanction by a court, but usually with the obligation of notification of the State Board of Mental Health. Even this certificate should be called for only where the patient refuses to go to the hospital voluntarily, and actually asks for the privilege of independent medical examination. Only in the relatively rare cases where the issue becomes one of need of guardianship, or in habeas corpus proceedings, should the courts be resorted to.

2. The great difficulty lies, of course, in the fact that quite a few patients, including those of the most recoverable types, are apt to be disturbing, and, therefore, undesirable for the hospital and its neighborhood. One of the most important practical problems of psychiatry is, therefore, to devise means of taking care of otherwise undesirable cases, so as to make unnecessary the transfer to special hospitals at a critical stage of their illness. The only way to eradicate the popular notion of "the insane wards" of a general hospital or of a clinic will be to make these provisions so much superior to what is at present available in general hospitals, and to the so-called excited wards of the overcrowded asylums, that the justification for calling these places "bull pens" and the like, and the annoyance to the neighborhood, is overcome. This naturally presupposes satisfactory rooms, as far as practicable noiseproof, with special provi-

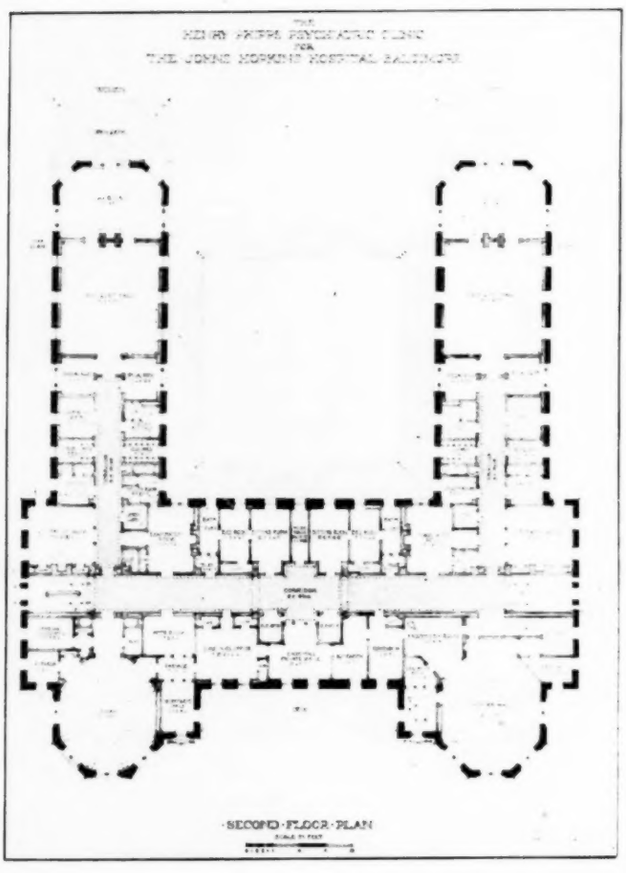


Fig. 5.

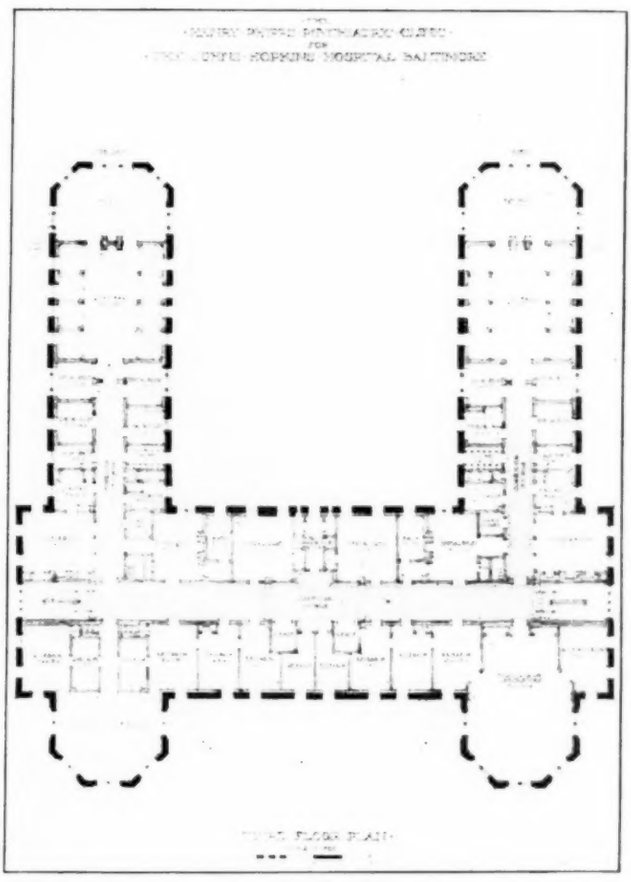


Fig. 6.

sions of ventilation, making it unnecessary to use merely a repressive policy in the handling of the patients. The hospital which will solve this problem, with adequate protection of the neighborhood and mutual protection of its own patients, will have solved one of the most burning problems of practical psychiatry. The provisions available at the Phipps Clinic are fairly effective. The rooms are provided with double walls, with air partition; the doors also are double, with air partition. Ventilation is provided by a general suction fan and also by a fan placed in the wall. There is no

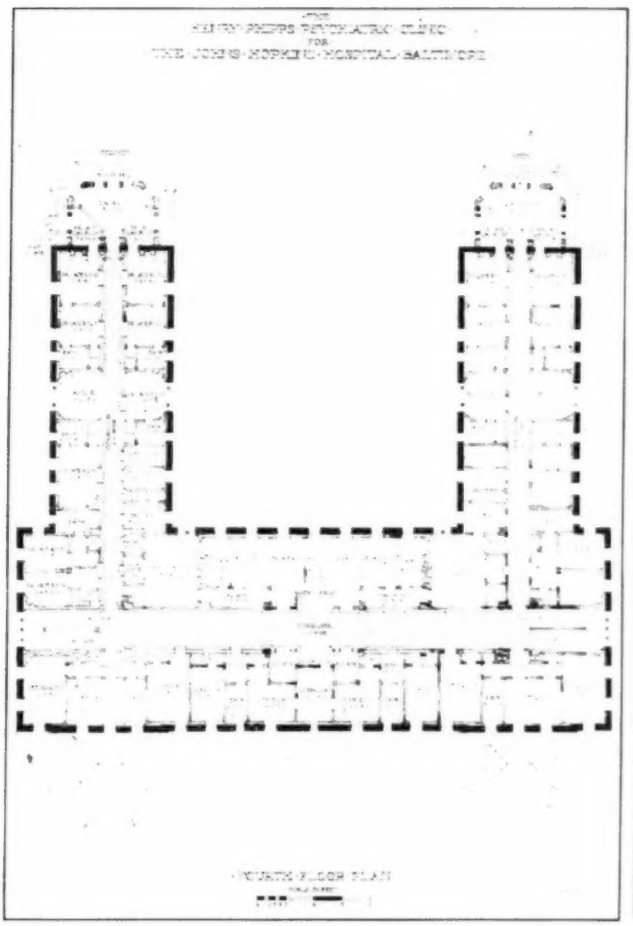


Fig. 7.

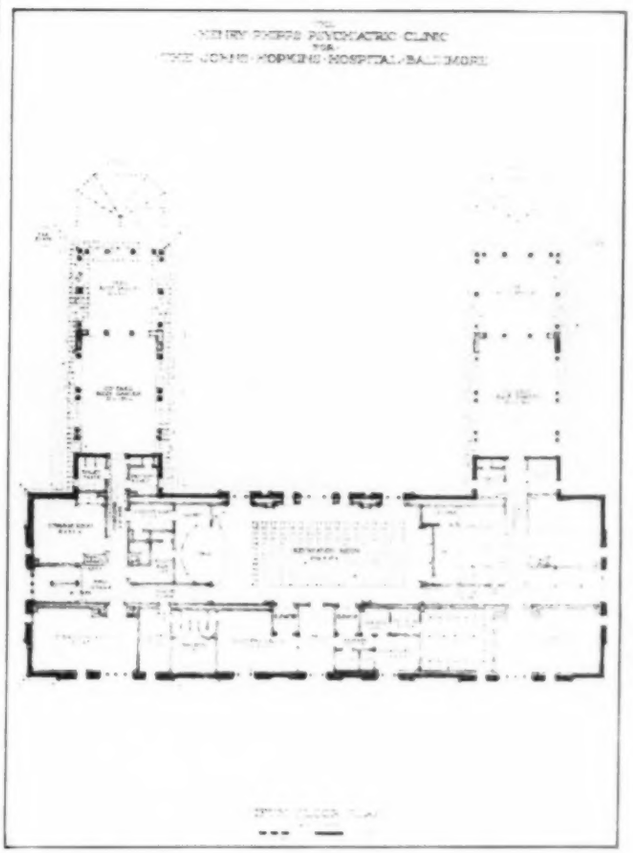


Fig. 8.

doubt that most of the avoidable deaths in mental diseases occur in the acute excitements, and no doubt also many of the unnecessary injuries to body and mind and to the feelings—hence the very great importance of improving the provisions for such cases in all hospitals, because every hospital is likely to have cases of delirium or excitement.

3. With regard to the laboratory divisions, it may deserve emphasis that the prospective heads of these departments will have to be not mere laboratory men, but directly in charge of the life problems with the patients as well as with the subsidiary research problems of the laboratory itself. Thus Dr. Sydney R. Miller has as his field of work not only the internal medicine laboratory, but he supervises and controls all the internal medicine work done on our patients, and pushes it with the facilities of his well-equipped laboratory, and with opportunities for experimental work. Similarly the head of the laboratory of neuropathology will not only do the histological work connected with the autopsies and the post-mortem work on the experimental animals, but will be directly connected with the neuropathological work with the patients and the experimental studies which can be connected with such work. The laboratory is not to be a mere post-mortem laboratory, but one which treats the post-mortem studies as *one* of the controls of the work on the living. The psychologist will be chosen from among those who consider psychology as a branch of biology and not as the abstruse, nonconnected domain of a purely introspective science. Psychology of this type will assert its kinship with common sense and make unnecessary the widespread complacency with which many physicians think that mental disturb-

ance should be studied merely as a reflection of things that can be seen under the microscope. While, to be sure, we aim to get at all the facts demonstrable by the microscope, there always will remain the task of explaining these facts in terms of experimental medicine, and, as soon as an attempt is made to do that, mental diseases call for studies of a broader biological kind, evidently too much neglected over a habit of misrepresenting the problems and the work of psychology and psychopathology. When we come to study the habit disorders and the conditions precipitating mental conflicts and other undoubtedly psychological problems, we find that the functional facts call for a great improvement of our methods of functional studies, whether they be of the field of internal medicine, or of neurobiology, or of psychobiology.

DISINFECTION AS PART OF THE HOSPITAL ADMINISTRATION.

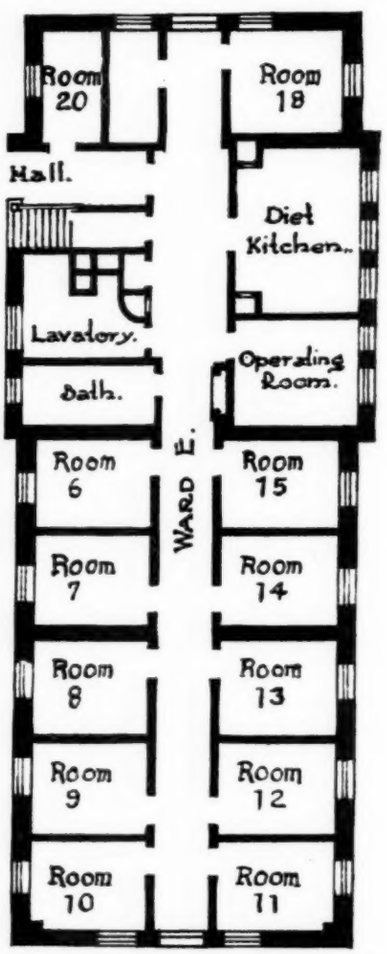
Description of the Technic of Isolation in a Special Hospital for the Care of the Communicable Diseases.

By D. L. RICHARDSON, M. D.
SUPERINTENDENT OF PROVIDENCE CITY HOSPITAL.

THE object of this paper is to present some facts concerning room and ambulance disinfection after contagious diseases. Results of room disinfection are based on an experience of two years—January 1, 1911, to January 1, 1913—in Ward E of the Providence City Hospital. This ward is on the first floor of the Isolation Building, into which are placed doubtful or mixed cases of scarlet fever and diphtheria, nearly all cases of chicken-pox, whooping-cough, rubella, mumps, measles, and miscellaneous cases of other infectious diseases, real or suspected, which enter the hospital. The ward contains twelve rooms, in each of which there is never more than one patient. Ten of these rooms are arranged opposite to each other, five on each side of a common corridor. The other two are situated more removed, one leading from the common corridor and one from the entrance vestibule. The technic of this ward is based on the principles of aseptic nursing. The infection is confined to the rooms immediately occupied by the patients, while the utility rooms and the corridor are as free from contagion as are those of any general hospital. The same nurses, observing aseptic precautions, care for all the patients.

When a patient is ready for discharge, he is taken to a bath-room, where he receives his discharge bath and puts on clean clothing. The room which he has vacated, together with its contents, is treated as follows:

The linen is taken out, thrown down a chute, and falls into a canvas bag in the basement. The linen is collected twice a day and taken to the laundry, where it is washed in ordinary laundry washers. The mattress and pillows are sent to the steam sterilizer. All utensils are boiled for at least ten minutes, except those which would be injured by boiling, such as some glass and rubber goods, which are treated with a solution of 1-20 carbolic acid. The floor, bed, bedside table, chair, lavatory, and walls within reach of the patient are



WARD E OF THE PROVIDENCE CITY HOSPITAL.

washed with soap and water. Fumigation is never employed. Clean supplies are placed in the room as soon as there is need of the room for a

new patient. The ward is always well occupied, and new patients are frequently placed in such rooms as soon as the room is cleaned. If they are not needed immediately, they are aired just as one would air any room after a noncontagious disease.

During the two-year period under consideration, 377 patients have been treated in this ward. Tables will be found below showing the diseases treated in each room in their chronological order. Each room is indicated by its number. Following the tables are comments on the secondary diseases which may have developed in patients occupying the rooms. It should be borne in mind that not a small number of the cases removed from these rooms were still in the acute process of the disease, being transferred to the scarlet fever or diphtheria wards after the diagnosis was clearly made. It will be noted that certain patients suffered from more than one disease, and that in a considerable number of cases the patient was admitted to the room the same day that the previous occupant was discharged.

ROOM 6.

Whooping-cough	Oct. 15 (1910)–Jan. 5 (1911)
Tonsillitis	Jan. 6–Jan. 14
Scarlet fever	Jan. 18–Feb. 17
Diphtheria	Feb. 18–March 4
Diphtheria	March 7–March 14
Peritonsillar abscess	March 15–April 3
Diphtheria carrier	April 4–April 18
Measles	April 19–April 21
Whooping-cough	April 21–May 13
Measles (malignant)	May 14–May 14
Scarlet fever	May 16–May 30
Rubella	May 30–June 11
Scarlet fever	June 11–July 17
Diphtheria	July 19–July 20
Tonsillitis and scarlet fever contact	July 21–July 25
Cholera (observation negative)	July 31–Aug. 9
Scarlet fever (malignant)	Sept. 6–Sept. 9
Scarlet fever	Sept. 12–Sept. 21
Erythema	Sept. 22–Oct. 12
Whooping-cough	Oct. 16–Oct. 18
Alveolar abscess	Oct. 20–Nov. 2
Whooping-cough	Dec. 22 (1911)–Jan. 8 (1912)
Diphtheria, chicken-pox, and measles	Feb. 4–Feb. 29
Diphtheria and chicken-pox	Feb. 29–March 15
Tonsillitis	March 15–April 4
Measles	April 4–April 5
Scarlet fever and chicken-pox	April 5–April 15
Measles and scarlet fever	April 15–April 20
Measles	April 20–May 11
Rubella	May 11–May 24
Erythema	May 24–May 27
Rubella	May 27–June 10
Diphtheria	June 10–June 24
Tuberculosis and whooping-cough	July 28–Aug. 5
Scarlet fever	Aug. 14–Aug. 25
Chicken-pox	Aug. 25–Sept. 17
Laryngitis	Sept. 22–Sept. 25
Scarlet fever[1]	Oct. 4–Nov. 8
Diphtheria and scarlet fever (?)[2]	Nov. 10 (1912)–Jan. 19 (1913)

ROOM 7.

Whooping-cough[3]	Dec. 30 (1910)–March 8 ('11)
Whooping-cough	March 10–March 23
Chicken-pox	March 23–April 21
Diphtheria	April 22–April 22
Whooping-cough	April 22–May 20
Rubella	May — –May 31
Scarlet fever and gonorrheal vaginitis	May 31–June 13
Measles	June 13–July 2
Diphtheria	July 4–July 13
Scarlet fever	July 14–Aug. 3
Measles	Aug. 8–Aug. 22
Whooping-cough	Sept. 1–Sept. 2
Tonsillitis	Sept. 10–Sept. 27
Rubella	Oct. 1–Oct. 16
Diphtheria	Oct. 24–Nov. 9
Whooping-cough and measles	Nov. 11–Nov. 29
Diphtheria, laryngeal	Dec. 6–Dec. 13
Diphtheria	Dec. 15–Dec. 30
Whooping-cough	Dec. 31 (1911)–Jan. 20 (1912)
Diphtheria and chicken-pox	Jan. 20–Feb. 3
Rubella	Feb. 3–Feb. 13
Chicken-pox	Feb. 13–Feb. 27
Whooping-cough, chicken-pox, and measles	Feb. 28–March 18
Rubella	March 18–April 11
Whooping-cough	April 11–April 20
Diphtheria and chicken-pox	April 20–May 1
Scarlet fever and chicken-pox	May 1–May 6
Measles and noma	May 6–Aug. 2
Chicken-pox and scarlet fever	Aug. 4–Aug. 6
Scarlet fever and chicken-pox	Aug. 16–Aug. 18
Chicken-pox	Aug. 19–Sept. 25
Lobar pneumonia and whooping-cough	Sept. 28–Oct. 24
Diphtheria	Oct. 25–Nov. 13
Measles	Nov. 27–Dec. 10
Diphtheria	Dec. 11–Dec. 26

ROOM 8.

No diagnosis	Dec. 11 (1910)–Jan. 7 (1911)
Whooping-cough	Jan. 23–March 19
Laryngitis (diphtheria ?)[4]	March 20–April 24
Scarlet fever	April 25–June 26
Scarlet fever	Aug. 10–Sept. 16
Scarlet fever	Sept. 18–Sept. 20
Scarlet fever	Sept. 20–Oct. 17
Measles	Oct. 18–Oct. 31
Diphtheria[5]	Nov. 3 (1911)–Feb. 14 (1912)
Diphtheria and chicken-pox	Feb. 14–March 13
Measles	March 13–March 29
Diphtheria	March 29–March 30
Chicken-pox and scarlet fever	March 30–April 16
Measles	April 16–April 23
Whooping-cough	April 23–April 30
Mumps	April 30–May 11
Rubella	May 12–May 22
Measles and noma	May 22–May 31
Measles	July 2–July 16
Whooping-cough	July 19–Aug. 4
Whooping-cough	Aug. 8–Aug. 28
Chicken-pox	Sept. 6–Oct. 4
Chicken-pox	Oct. 14–Nov. 5
Scarlet fever	Nov. 8–Dec. 9

ROOM 9.

Scarlet fever	Nov. 28 (1910)–Jan. 16 ('11)
Scarlet fever	Jan. 18–Jan. 23
Measles	Jan. 23–Jan. 25
No diagnosis	Jan. 26–Feb. 22
Measles	Feb. 22–March 7
Diphtheria	March 11–April 10
Scarlet fever	April 15–May 15
Whooping-cough	May 16–May 26
Whooping-cough	May 27–May 31
Scarlet fever	June 4–June 19
Chicken-pox	June 19–July 2
Scarlet fever	July 4–Aug. 11
Chicken-pox	Aug. 12–Aug. 25
Whooping-cough	Sept. 1–Sept. 17
Scarlet fever[6]	Sept. 26–Nov. 12
Whooping-cough	Nov. 18–Nov. 23
No diagnosis	Nov. 26–Dec. 12
Whooping-cough	Dec. 12 (1911)–Jan. 2 (1912)
Scarlet fever and chicken-pox[7]	Feb. 14–March 11
Whooping-cough and measles	March 12–April 17
Scarlet fever and chicken-pox	April 17–May 7
Measles	May 7–May 20
Measles and diphtheria, laryngeal	May 20–May 21
Measles, noma, and chicken-pox	May 21–May 25
Rubella	May 25–June 8
Measles	June 9–June 22
Scarlet fever	June 28–July 4
Measles	July 4–July 19
Scarlet fever	July 21–July 21
Whooping-cough	July 25–Aug. 4
Scarlet fever[8]	Aug. 6–Oct. 7
Observation	Oct. 14–Nov. 5
Influenza	Nov. 5–Nov. 19
Scarlet fever	Nov. 21–Dec. 16

ROOM 10.

Scarlet fever and diphtheria	Dec. 24 (1910)–Jan. 25 ('11)
Diphtheria	Jan. 29–Jan. 30
Scarlet fever	Jan. 30–Feb. 28
Chicken-pox	March 1–March 20
Otitis media, acute	March 22–April 8

[1]This was a very doubtful case of scarlet fever.

[2]Developed scarlet fever December 16, 1912, 36 days after admission to hospital. Was referred to hospital for diphtheria, which clinically she presented, but was detained that period of time because a brother, admitted the same day, presented symptoms of scarlet fever. During this period she showed some signs of desquamation. She developed a very definite, but very mild, attack of scarlet fever December 16. There was a patient convalescent with scarlet fever in the room opposite her at the time she developed the disease.

[3]Developed mild attack of scarlet fever January 24, 1911. Three other cases developed about the same time in this ward January 29, January 30, and February 23, respectively. We thus have every reason to believe that the disease was transmitted by some one employed in the ward and not from some infection remaining in the room.

[4]Developed scarlet fever January 29, 1911. One of the group referred to under note 3.

[5]Developed measles November 30, 1911, after being in the hospital 27 days. Belonged to a group of measles cases that developed about the same time—September 30, November 14, November 27 (2), and December 4. We again have every reason to believe transmission was by those caring for these cases.

[6]Developed measles September 30, 1911. One of the group referred to under note 5.

[7]Developed measles at home March 15, 1912, 4 days after leaving hospital. Three other cases of measles developed in this ward February 28 (2) and March 12. We believe that this child belongs to that group and was infected by faulty technic. It will be noted that the next previous case of measles treated in that room was February 22 to March 7, 1911.

[8]Developed chicken-pox September 2, 1912. Another child in this ward developed chicken-pox September 18. There had been no chicken-pox in the room since August 12-25, 1911.

Scarlet fever	April 10–April 15
Scarlet fever	April 16–June 9
Scarlet fever	July 12–Oct 6
Diphtheria[9]	Oct. 14 (1911)–Feb. 10 (1912)
Variola	Feb. 10–Feb. 10
Whooping-cough[10]	Feb. 11–April 6
Rubella	April 6–April 26
Rubella	April 27–May 3
Rubella	May 3–May 16
Measles and noma	May 16–May 28
Scarlet fever	May 28–June 24
Scarlet fever	July 3–July 4
Measles	July 4–July 20
Scarlet fever	July 23–July 28
Diphtheria and tuberculosis	July 31–Aug. 12
Diphtheria and scarlet fever	Aug. 25–Aug. 26
Scarlet fever	Aug. 27–Aug. 28
Scarlet fever and chicken-pox	Sept. 9–Oct. 29
Eczema	Oct. 30–Nov. 4
Scarlet fever and diphtheria	Nov. 5–Nov. 26
Diphtheria	Nov. 27–Dec. 12

ROOM 11.

Chicken-pox	Dec. 16 (1910)–Jan. 14 ('11)
Diphtheria	Jan. 14–March 28
Measles	April 2–May 4
Tonsillitis	May 7–May 14
Rubella	May 16–May 23
Rubella	May 23–June 5
Mumps	June 6–June 25
Chicken-pox	June 25–July 21
Whooping-cough	July 21–July 26
Diphtheria	July 31–Aug. 19
Erythema multiforme	Aug. 20–Sept. 25
Tonsillitis	Sept. 26–Oct. 11
Measles and whooping-cough	Oct. 16–Dec. 23
Whooping-cough	Dec. 26 (1911)–Jan. 22 ('12)
Scarlet fever	Jan. 23–Jan. 29
Measles	Feb. 1–Feb. 2
Measles	Feb. 2–Feb. 15
Measles	Feb. 16–Feb. 29
Measles	March 1–March 28
Measles	March 29–March 31
Rubella	March 31–April 13
Scarlet fever and diphtheria	April 13–April 24
Rubella	May 7–May 20
Pneumonia	May 20–May 20
Tuberculosis, pulmonary	June 7–July 1
Whooping-cough	July 10–Aug. 29
Tonsillitis	Sept. 7–Sept. 11
Peritonsillar abscess	Sept. 19–Sept. 22

ROOM 12.

Whooping-cough[11]	Dec. 6 (1910)–March 7 ('11)
Diphtheria	March 8–April 11
Broncho-pneumonia	April 12–April 29
Scarlet fever	May 1–May 8
Measles	May 8–May 27
Rubella	May 27–June 9
Scarlet fever	June 9–June 30
Variola	July 1–July 2
Whooping-cough	July 6–July 6
Chronic laryngeal stenosis	July 8–Aug. 10
Scarlet fever	Aug. 12–Aug. 19
Measles	Sept. 11–Sept. 26
Scarlet fever	Oct. 4–Nov. 5
Measles	Nov. 7–Nov. 11
Acute otitis media	Nov. 22–Nov. 29
Bronchial asthma	Dec. 5–Dec. 8
Measles	Dec. 12–Dec. 28
Measles	Dec. 28 (1911)–Jan. 11 ('12)
Secondary syphilis	Jan. 28–Feb. 5
Chicken-pox	Feb. 5–Feb. 22
Observation[12]	Feb. 23–March 3
Diphtheria	March 4–March 19
Rubella	March 20–April 5
Scarlet fever and chicken-pox	April 5–April 19
Scarlet fever and rubella	April 19–May 9
Scarlet fever	May 10–May 14
Laryngeal diphtheria and measles	May 14–May 15
Scarlet fever	May 15–June 13
Tonsillitis	June 15–July 6
Pneumonia	July 3–July 9
Measles, malnutrition and chicken-pox[13]	July 10–Oct. 10
Erythema multiforme and diphtheria carrier	Oct. 16–Nov. 7

ROOM 13.

Whooping-cough	Oct. 19 (1910)–Jan. 11 ('11)
Diphtheria[14]	Jan. 7–March 28
Bronchitis	March 29–March 30
Diphtheria	March 31–April 25
Scarlet fever	April 26–May 26
Measles	May 31–June 17
Scarlet fever	June 17–July 13
Whooping-cough	July 17–Aug. 6
Impetigo[15]	Aug. 6–Dec. 16
Chicken-pox	Dec. 16–Dec. 23
Measles	Dec. 24 (1911)–Jan. 10 ('12)
Measles	Jan. 10–Jan. 26
Multiple arthritis	Jan. 27–Feb. 8
Measles	Feb. 9–Feb. 14
Whooping-cough[16]	Feb. 14–May 3
Rubella	May 3–May 4
Rubella	May 4–May 17
Alveolar abscess	May 17–May 25
Measles	May 25–June 11
Scarlet fever and diphtheria	June 11–June 11
Scarlet fever	June 12–June 14
Status lymphaticus	June 14–June 15
Scarlet fever	June 16–July 13
Whooping-cough	July 16–July 20
Whooping-cough	July 27–Sept. 1
Scarlet fever and chicken-pox	Sept. 9–Sept. 12
Diphtheria	Sept. 15–Oct. 7
Diphtheria	Oct. 9–Oct. 28
Diphtheria	Oct. 29–Dec. 3
Diphtheria	Dec. 4–Dec. 4
Lobar pneumonia and diphtheria carrier	Dec. 5–Dec. 20

ROOM 14.

Chicken-pox	Dec. 6 (1910)–Jan. 14 (1911)
Diphtheria	Jan. 18–Feb. 25
Chicken-pox	Feb. 25–March 24
Whooping-cough	March 24–March 28
Measles	March 28–April 10
Measles	April 12–April 26
Whooping-cough and chicken-pox	April 26–June 5
Enteritis	June 7–June 29
No diagnosis	July 1–July 13
Whooping-cough	July 16–Oct. 24
Measles and whooping-cough	Oct. 25–Dec. 6
Measles	Dec. 8–Dec. 28
Measles	Dec. 29 (1911)–Jan. 13 ('12)
Whooping-cough[17]	Jan. 13–March 23
Rubella	March 23–April 5
Urticaria	April 5–April 6
Whooping-cough	April 6–April 20
Diphtheria	April 21–May 5
Measles	May 21–June 3
Rubella	June 4–June 11
Tonsillitis	June 12–June 24
Measles	June 25–July 2
Tonsillitis	July 12–July 17
Measles	July 26–Aug. 9
Measles and scarlet fever	Aug. 20–Oct. 1

ROOM 15

Scarlet fever	Nov. 28 (1910)–Jan. 3 (1911)
Broncho-pneumonia and tonsillitis	Jan. 3–Jan. 19
Scarlet fever	Jan. 20–Feb. 8
Rhinitis	Feb. 14–April 6
Chicken-pox	April 6–April 18
Whooping-cough and chicken-pox	April 20–May 3
Whooping-cough	May 5–May 16
Whooping-cough	May 17–May 18
Scarlet fever and chicken-pox	May 18–May 18
Scarlet fever	May 21–Sept. 28
Scarlet fever	Sept. 29–Oct. 21
Scarlet fever	Oct. 24–Nov. 7
Scarlet fever and chicken-pox[18]	Nov. 11–Dec. 22
Scarlet fever	Dec. 23 (1911)–Jan. 18 ('12)
Measles	Jan. 18–Jan. 31
Diphtheria and chicken-pox	Feb. 1–Feb. 19
Measles	Feb. 20–March 5
Measles and scarlet fever[19]	March 5–April 17
Measles	April 18–May 21
Tonsillitis	May 22–June 12
Tonsillitis	June 14–June 19
Measles	June 21–July 4
Pityriasis rosea	July 4–July 16
Tonsillitis	July 16–July 20
Diphtheria	July 21–Nov. 19
Scarlet fever and diphtheria carrier	Nov. 21–Dec. 17
Pulmonary tuberculosis	Dec. 20–Dec. 22
Tonsillitis	Dec. 23–Dec. 31

ROOM 18.

Scarlet fever	Dec. 4 (1910)–Jan. 10 (1911)
Scarlet fever	Jan. 17–Feb. 2
Diphtheria	Feb. 6–Feb. 19
Scarlet fever	Feb. 24–March 16
Diphtheria	March 17–April 5
Diphtheria	April 6–May 10
Chronic nephritis	May 11–May 20
Measles	May 20–June 2
Rubella	June 8–June 25

[9]Developed measles November 27, 1911. Other cases developed in this ward September 30, November 14, 27, and 30, and December 4. It will be noted that there had been no previous case of measles in the room as far back as January 1, 1911.

[10]Developed measles February 28, 1912. Other cases of measles developed in this ward February 28 and March 12 and 15.

[11]Developed scarlet fever January 30, 1911. Other cases of scarlet fever developed in this ward January 24 and 29 and February 23.

[12]Developed measles March 12, 1912, at home one week after leaving hospital. There had been other cases of measles in the ward developing February 28 (2) and March 15.

[13]Developed chicken-pox September 18, 1912. Another child developed chicken-pox in the room across the corridor September 2. There had been no previous case of chicken-pox in the room since April 5-19, 1912.

[14]Developed scarlet fever February 23, 1911. Other cases developed in the same ward January 24, 29, and 30.

[15]Developed measles November 14, 1911. One of the six cases developing September 30, November 27 (2), November 30, and December 4.

[16]Developed scarlet fever March 12, 1912. There was scarlet fever under treatment in the ward at the time, and it will be noted that the next previous case in the room was June 17–July 13, 1911.

[17]Developed chicken-pox February 29, 1912. Active cases of chicken-pox were under treatment in the ward at the time. The next previous case of chicken-pox in this room was April 26 to June 5, 1911.

[18]Developed measles November 27, 1911. One of the six cases developing September 30, November 14, 27, and 30, and December 4. There had been no measles in this room as far back as January 1, 1911.

[19]This child is said to have had chicken-pox at home April 18, 1912. There was active chicken-pox in the ward when the child was discharged, April 17.

Chicken-pox	June 25–Aug. 1
Observation	Aug. 2–Aug. 3
Whooping-cough and vaginitis gonorrheal	Aug. 17–Sept. 12
Whooping-cough	Sept. 16–Sept. 25
Dermatitis scarlatinoides	Nov. 1–Nov. 25
Diphtheria	Dec. 12–Dec. 16
Bronchitis	Dec. 16–Dec. 27
Chicken-pox	Dec. 27 (1911)–Jan. 12 ('12)
Scarlet fever and chicken-pox	Jan. 13–Feb. 17
Whooping-cough and pneumonia	Feb. 19–Feb. 22
Diphtheria and chicken-pox	Feb. 23–March 14
Rubella	March 14–March 27
Measles	March 28–March 29
Cervical adenitis and chicken-pox	March 29–April 23
Measles	April 23–April 24
Measles and pneumonia	April 24–April 27
Whooping-cough	April 27–May 22
Chicken-pox	May 22–June 15
Diphtheria	June 16–July 10
Whooping-cough	July 10–Aug. 4
Scarlet fever and chicken-pox	Aug. 6–Aug. 31
Diphtheria	Sept. 11–Sept. 27
Measles	Oct. 10–Oct. 25
Scarlet fever	Nov. 2–Dec. 7

ROOM 20.

Scarlet fever	Jan. 22–Jan. 24 (1911)
Diphtheria	Jan. 26–March 11
Peritonsillar abscess	March 22–April 24
Tonsillitis	April 28–May 3
Rubella	May 6–May 7
Chronic otitis media	May 9–May 13
Whooping-cough	May 13–May 16
No diagnosis	May 27–June 3
Scarlet fever	June 13–July 19
Rubella	July 20–Aug. 2
Observation cholera (negative)	Aug. 2–Aug. 3
Measles	Sept. 20–Sept. 25
Scarlet fever	Oct. 11–Oct. 17
Gastro-enteritis[20]	Oct. 30–Dec. 28
Diphtheria and measles	Dec. 31 (1911)–Jan. 3 (1912)
Pneumococcus meningitis	Jan. 5–Jan. 5
Whooping-cough	Jan. 8–Jan. 23
Impetigo[21]	Jan 23–March 16
Measles	May 13–May 17
Measles	May 17–May 30
Broncho-pneumonia, rubella, and enteritis	May 30–June 1
Diphtheria	June 8–June 12
Scarlet fever and diphtheria carrier	June 13–July 13
Whooping-cough	July 13–July 27
Scarlet fever	July 27–July 27
Diphtheria	July 28–Aug. 31
Diphtheria	Oct. 18–Nov. 6
Scarlet fever	Nov. 13–Nov. 21
Observation	Nov. 21–Nov. 22
Septic sore throat	Nov. 22–Nov. 26
Measles	Nov. 28–Nov. 29
Measles and noma	Dec. 2–Dec. 18

CONCLUSIONS.

These facts relative to the disinfection of rooms and contents are presented in considerable detail, and will require careful reading in order to arrive at a just estimate of the value of the methods employed. When the word "ward" is used it refers to the whole floor of twelve rooms. It should be remembered that each room contains a single patient, and that all patients are kept apart and are cared for by aseptic nursing. We have never had a secondary disease develop among these patients when we had any reason to suspect that the infection was received from the room and have had every reason to believe that it was carried because of improper technic. We are fully convinced, from our experience, that fumigation is entirely unnecessary in hospital work, and that strict cleanliness, with especial attention directed to thorough sterilization of such articles as thermometers, pieces of waste gauze, or anything else soiled with secretions from the nose or throat of patients, is quite sufficient. The infecting material from the patient is not so widely distributed about the bed clothing and furniture of a room as is commonly supposed. It is only the things that are soiled with the infecting material that are particularly dangerous.

AMBULANCE DISINFECTION.

All the contagious diseases, including tuberculosis, since the opening of the hospital in March, 1910, have been brought either in an ambulance or in a closed coupe. It has been our practice to send the coupe whenever possible, because so many people object to the ambulance, and also because the coupe is a lighter vehicle and calls can thus be made more expeditiously. Children under 10 years of age and all patients who are not very sick are brought to the hospital in the coupe; all other cases come in the ambulance. The technic employed is as follows:

The driver and ambulance attendant wear washable coats and, if necessary, washable gloves, which are changed each trip. Fresh blankets and pillow slips are used on every trip. After being used, blankets, coats, gloves, and pillow slips are sent to the laundry. The ambulance attendant enters the house and fills out an ambulance card before he touches the patient or anything in the house. The ambulance card is placed in his pocket and is thus not infected. The patient, if a child, is wrapped in a blanket and taken to the ambulance or coupe, and, if the coupe is used, either sits or lies on the seat and remains thoroughly wrapped in the blanket until deposited in the proper admitting room. The driver and attendant wash their hands thoroughly between trips. The ambulance is practically always washed with soap and water between cases, but the coupe, while frequently washed, is not washed more than once a day if there are many calls.

From March 1, 1910, to February 1, 1912, the ambulance made 1,321 trips. Cases were brought in either vehicle, according to convenience and not according to disease. Since February 1, 1912, an accurate record has been kept as to whether the ambulance or the coupe was sent, and the following diseases, according to admission diagnosis, were brought to the hospital between February 1, 1912, and February 1, 1913:

Ambulance—Chicken-pox, 3; diphtheria, 81; measles, 20; mumps, 2; rubella, 2; scarlet fever, 70; tuberculosis, 28; variola, 4; whooping-cough, 5; other diseases, 4.

Coupe—Chicken-pox, 13; diphtheria, 248; measles, 76; mumps, 1; rubella, 8; scarlet fever, 207; tuberculosis, 35; variola, 3; whooping-cough, 16; other diseases, 4.

A careful consideration and discussion will be

[20] Developed measles December 4, 1911. One of the six cases developing September 30, November 4 and 27 (2), and November 30.

[21] Developed measles February 28, 1912. This is one of the four cases developing February 28 (2) and March 12. The patient also developed chicken-pox March 16, 1912. There were several active cases of chicken-pox under treatment in the ward, and it should be noted that there had been no previous case of chicken-pox in the room.

found below of every case of secondary infection occurring within the ordinary incubation period of the particular disease in question from the time of admission up to the time of the first symptom. The length of the incubation periods for the various diseases referred to is as follows: chicken-pox, 21 days; diphtheria, 7 days; measles, 14 days; mumps, 10 days; rubella, 21 days; scarlet fever, 7 days; whooping-cough, 21 days. All other secondary diseases arising among patients admitted have been considered as contracted in the hospital.

All secondary diseases occurring among admitted patients within the above limits will be taken up in two periods: first, those developing among the 1,321 patients admitted previously to February 1, 1912; and second, among the 842 patients admitted from that time to February 1, 1913. As stated above, our records during the first period do not show which vehicle (ambulance or coupe) was used in removing these patients to the hospital. The several cases will be treated in chronological order.

1910—On March 6 a child was admitted for measles and gonorrheal vaginitis. On March 20 she developed chicken-pox. There was a history of exposure to chicken-pox at home. This case was admitted within a few days of opening of hospital and no chicken-pox had ever been brought to the hospital in either vehicle previously.

On March 28, 1910, a girl aged 5 years was admitted to the hospital for scarlet fever. The diagnosis was doubtful. On April 13 she developed a rubella rash. The next previous case of rubella brought to the hospital was March 6. Another was brought in March 3. These were the only cases previously brought to the hospital.

On June 2, 1910, a child aged 4 years was admitted for diphtheria, with history of secondary illness. There was no vomiting, but marked angina, with membrane and cervical swelling. On June 8 the body was covered with an erythematous eruption, later followed by desquamation, evidently scarlet fever. Temperature was 102 degrees or more from time of admission. Final diagnosis, scarlet fever and diphtheria. The next previous case of scarlet fever brought to the hospital was May 27.

November 5, 1910, a child was admitted to the hospital for diphtheria from an infants' asylum. He had been in this asylum for three days only, and was apparently sick at time of admission to the asylum. The child was exceedingly ill with clinical diphtheria, and there was a rash about the lower part of the neck on admission. November 8, three days later, the child developed a well-defined scarlet fever erythema. Eventually died on the 25th. The next previous case of scarlet fever to be brought to the hospital was on November 4. Though we have no record, it is doubtful whether they came in the same vehicle, as the child brought to the hospital on the previous day was aged 12 years, and too large to be put upon the seat of the coupe.

The two last-mentioned cases may point to ambulance infection, but, in view of our subsequent experience, we are inclined to believe that they were probably infected with both scarlet fever and diphtheria before entrance to hospital.

1911—There were no cases that developed a secondary infection within an incubation period dated from the time of admission.

1912—On January 7, 1912, a child aged 6 years was admitted to hospital for scarlet fever and on January 12 developed chicken-pox. The chicken-pox obviously developed too soon to be explained by ambulance infection.

From February 1, 1912, to February 1, 1913, the following cases should be mentioned:

April 5, 1912, a child aged 10 years was admitted for scarlet fever. On April 19 she developed rubella at a time when there was no rubella in the ward. The next previous case of rubella was brought to the hospital March 31 and the next previous to that on March 18. Meanwhile ten other patients had been brought to the hospital, none of whom developed rubella.

June 11, 1912, a child aged 3 years was admitted for scarlet fever. He began to cough hard two weeks after admission to hospital; this later proved to be whooping-cough. A brother was admitted five days after his admission and had scarlet fever and whooping-cough on admission.

December 3, 1912, a child aged 5 years was admitted for diphtheria from an infant asylum where there were several cases of whooping-cough at the same time. Ten days later the child was coughing hard and a diagnosis of whooping-cough was made at that time. There is record that the child was coughing previous to the recognition of the disease.

In all, 2,163 patients have been brought to the hospital under the foregoing system and observing the same technic. We believe that our results go to show that it is entirely safe to bring various diseases to the hospital in the same vehicles, providing reasonable precautions are observed, and that fumigation of the ambulances is entirely unnecessary.

Dr. A. C. Foster, a practicing physician at Owensboro, Ky., and his brother, Dr. H. L. Foster, who has just left a professorship in the University of Oklahoma, will together erect and conduct a modern fire-proof sanatorium in Owensboro.

SOME SPECIAL FEATURES OF THE BARNES HOSPITAL, ST. LOUIS.

An Affiliation of a Hospital and a Medical School Under Unusual Conditions—An Example of Medical Cooperation.

By FRED. T. MURPHY, M. D., St. Louis.

FIGURE 1 shows the entire group of medical buildings which is now under construction in St. Louis on Kingshighway and Euclid avenue, facing Forest Park. It includes the Barnes Hospital, the St. Louis Children's Hospital, and the medical school, out-patient building, and power plant of Washington University.

Such a group of buildings, representing the interests of three boards of trustees, is unusual and may be considered as evidence of the most intelligent cooperation between institutions whose purpose is to care for sick people, to educate doctors, and to further medical science; aims so interdependent that no one of them can attain the highest development unless linked with the others. In this association the corporate entity of no institution has been sacrificed, but by a wise and friendly affiliation the actual management of various interests has been provided for in such a manner that the same results may be attained as if the control and administration were centralized in a single board.

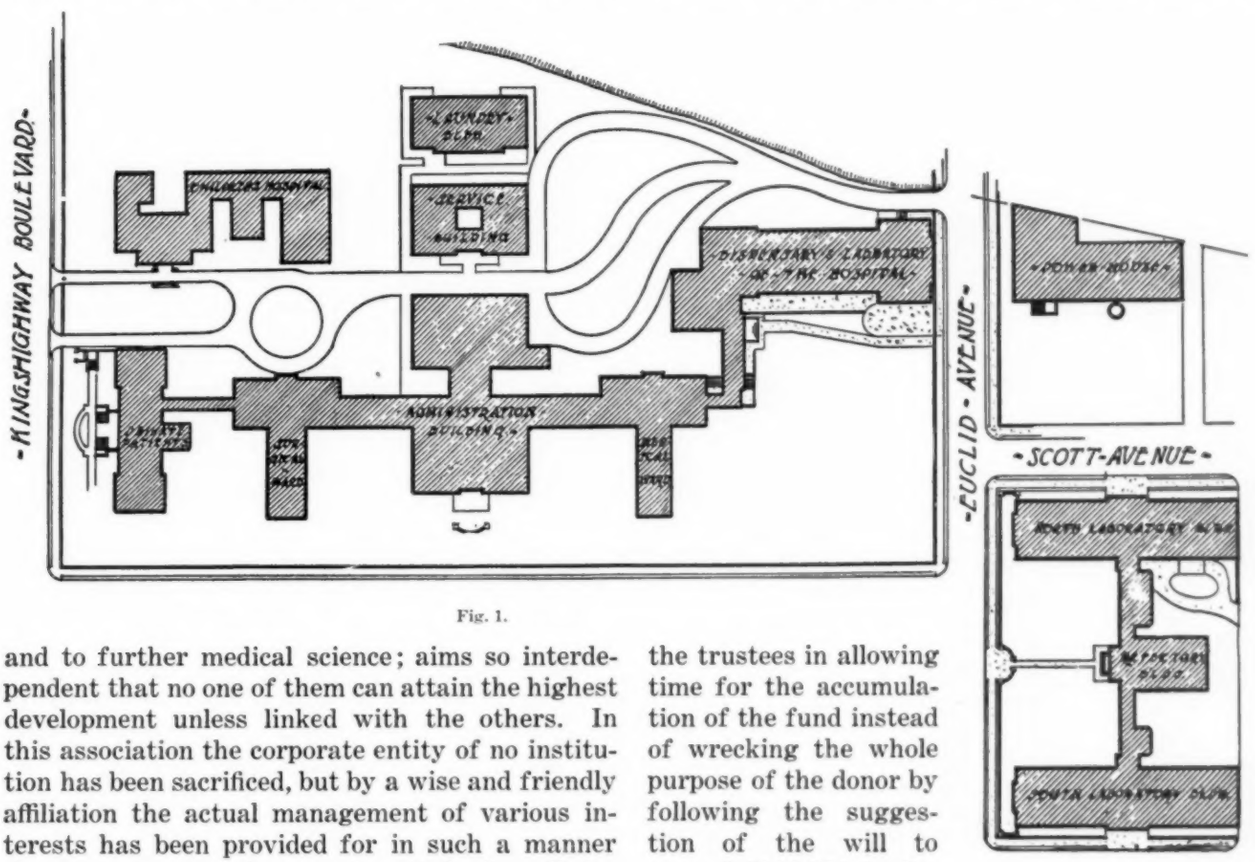


Fig. 1.

While some of the features of the Barnes Hospital alone are to be described in this article, this foreword of explanation has been given because of the far-reaching influence of this principle of affiliation between hospitals and medical schools, a principle which offers equal advantage to all concerned, but which in the past has been but rarely accepted and put into use, largely perhaps because of the difficulties caused by locations, but too often, I fear, because of the unwillingness of hospital boards to accept the incontrovertible fact that only by close association with an institution interested in medical teaching and research can they obtain the best service for their patients, and, on the other hand, failure on the part of the medical schools to acknowledge and rectify their shortcomings.

Another interesting feature in the development of the Barnes Hospital is the wisdom shown by the trustees in allowing time for the accumulation of the fund instead of wrecking the whole purpose of the donor by following the suggestion of the will to expend $100,000 in the erection and equipment of the hospital and to use the balance of the estate, some $840,000 for endowment. By this foresight it has been possible to erect the present hospital, fireproof and modern in equipment, at a cost of something over $1,000,000, and to leave in excess of $1,000,000 for endowment.

The Barnes Hospital, as is shown in the outline sketch (Fig. 1), consists of a central administration building, a medical unit, a surgical unit, a

private pavilion, a service building, and a laundry. Three full stories is the elevation, except in the laundry. All these buildings are connected by corridors both above and under ground. The general features of the construction are as follows: Fireproof construction has been used throughout. The external walls are of impervious, light-gray brick, trimmed with limestone. The floors are of marble tile or battleship linoleum laid on cement, with cement in the basement, and the interior walls are of tile, enameled brick, glass, or enameled plaster. All corners and angles are coved. The passenger and freight elevators are electric, with full automatic press button control. Natural ventilation is used except in special localities—such as specimen closets, where there is a forced draught, and all toilet rooms, which are ventilated by artificial draught through the water closet seat. Direct radiation from forced hot water is the system of heating employed, with the radiator loops 4 inches apart instead of 2 inches, to admit thorough cleaning. Ammonia brine supplies the refrigeration. Power, light, heat, and refrigeration are received from the central plant, the property of Washington University, which is located across Euclid avenue and beside the railroad track. The delivery of fuel is thereby materially simplified and cheapened, all coal and ash handling being done mechanically. All doors and corridors have been made of sufficient width so that a patient may be transported on a ward bed to any part of the hospital.

The telephone system is an intercommunicating one within the hospital, and this system may be used outside in connection with the local Kinloch line. Local and long distance Bell lines are installed in the main offices of the various departments. No vacuum cleaning system has been included in the equipment, it being felt that for such work as might demand this process a small portable machine, with an electric attachment, better meet the needs. The exact tint for the walls has not been decided upon, but will probably be a gray or a light green.

All general lighting of wards and single rooms is indirect, and at the head of each bed is a wall plug for a bedside lamp. The Bryant system of nurses' signals will be used, there being the usual arrangement of control whereby emergency calls may be given from the bedside. The nurse's signal can be turned off only at the bedside of the patient giving the signal, and all signals register in the head nurse's office as well as on the wall.

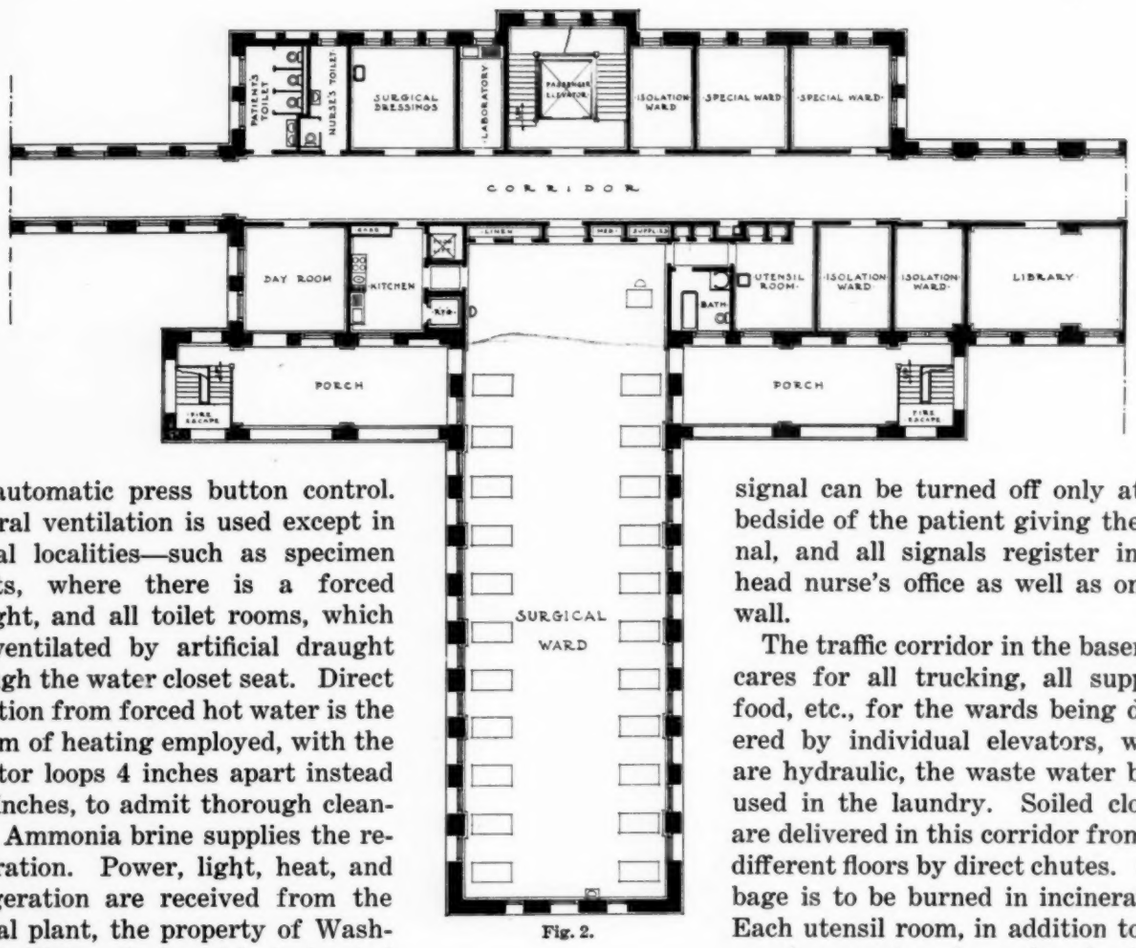


Fig. 2.

The traffic corridor in the basement cares for all trucking, all supplies, food, etc., for the wards being delivered by individual elevators, which are hydraulic, the waste water being used in the laundry. Soiled clothes are delivered in this corridor from the different floors by direct chutes. Garbage is to be burned in incinerators. Each utensil room, in addition to the usual apparatus, is equipped with a sterilizer for excreta.

The roof will be used for roof gardens and promenades.

Fig. 2 gives the outline of a typical ward, of which there are six—three medical and three surgical. The general arrangement on both services is the same. The general plan is that of the letter "T," with the outdoor porches arranged on either side parallel to the head of the "T." This form was adopted because it seemed to offer the maximum efficiency at a minimum effort on the part of the nurses and to utilize to the best advantage

the southern exposure facing on the city's beautiful Forest Park. In the head of the "T," at the north, are the utensil and service rooms, also the small isolation rooms, the laboratory, and general dining room for patients who are able to be up. The body of the "T" is thus retained completely for the ward, giving unobstructed sunlight on three sides, since the adjoining building is 100 feet away. Each floor will accommodate from 31 to 35 patients. In general, the porch to the west off the sitting room will be used for ambulatory cases, and that on the east for the patients who are taken out in their beds. The combined accommodation of these two porches will provide for all patients who may be able to be moved from the wards. At the head of the ward, near the head nurse's desk, are medicine closets, blanket warmers, and clothes chutes, which are built in the wall. The arrangement of the service room and the utensil room is such as to overcome the usual objectionable features due to the commingling of ward service and kitchen service.

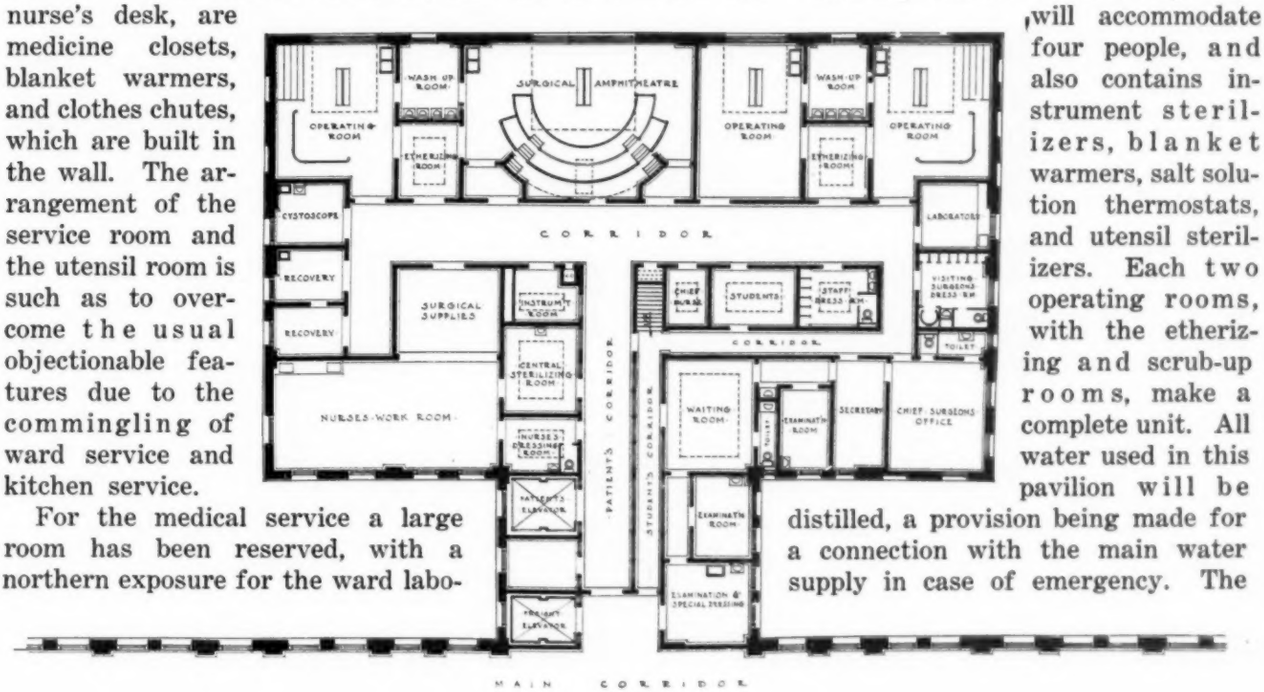


Fig. 3.

For the medical service a large room has been reserved, with a northern exposure for the ward laboratory. For the surgical service the laboratory space has been reduced to the minimum, and a larger space reserved for a surgical dressing room, which will be equipped for minor surgical work. In the medical service all beds are provided with possible attachments to the elctrocardiograph, which will be located in the medical laboratory on the second floor of the out-patient building and connected with the ward by a direct telephone.

Fig. 3 gives the outline of the operating floor. This floor provides for four operating rooms, with northern exposure as well as overhead light, three of which have no permanent amphitheater seats; a cystoscopic room; two recovery rooms; a large work room for nurses; a sterlizing room; a nurses' dressing room, head nurse's room; instrument room; house staff room; visiting staff room, surgeon-in-chief's quarters; pathologic laboratory; and a suite of three rooms for the reception of the private patients of the staff. The general arrangement is such that the nurses have the western half of the pavilion and the doctors and students the eastern half. Entrance is through two corridors—the one for physicians and students, the other for patients and nurses. Patients are delivered into this closed corridor from a special elevator, and, except as they cross the main transverse corridor, they do not see either doctors or students. Spectators reach the amphitheater by a short flight of steps which leads from the entrance corridor over the main transverse corridor. Between each operating room is an etherizing room and a scrub-up room. The scrub-up room will accommodate four people, and also contains instrument sterilizers, blanket warmers, salt solution thermostats, and utensil sterilizers. Each two operating rooms, with the etherizing and scrub-up rooms, make a complete unit. All water used in this pavilion will be distilled, a provision being made for a connection with the main water supply in case of emergency. The distillation plant is located in the half story above the operating floor. This plant will also supply distilled water to the emergency operating room in the accident ward on the first floor. The walls of the operating rooms are of Carrara glass up to the ceiling. Artificial lighting for the operating tables will be after the plan devised by Doctor Bartlett. The floors of the operating rooms are of marble Mosaic tile, with red Swanton marble center under the operating table, each having a large floor drain. The sterilizing room is equipped to do all the sterilizing for the hospital and out-patient department. In the larger operating room is a small amphitheater to accommodate sixty to seventy-five people, and this room will be equipped with a projectoscope for showing microscopic and gross specimens, and illuminators for x-ray plates. Movable iron stands will be used

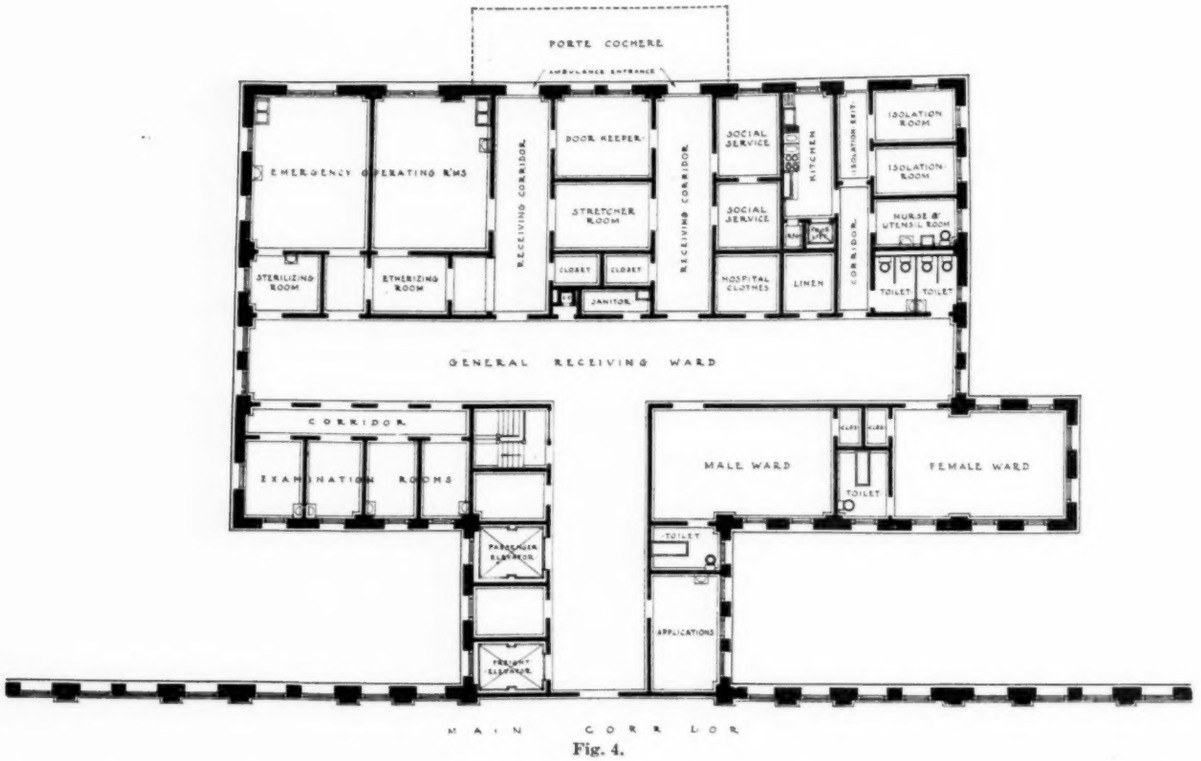


Fig. 4.

in the smaller rooms for spectators. All operating rooms and etherizing rooms are connected with the nitrous oxid generator, which is located in the cellar.

bers of the staff entering and leaving their dressing rooms must pass by the door.

The three examining rooms and the reception room for private patients have been made a part

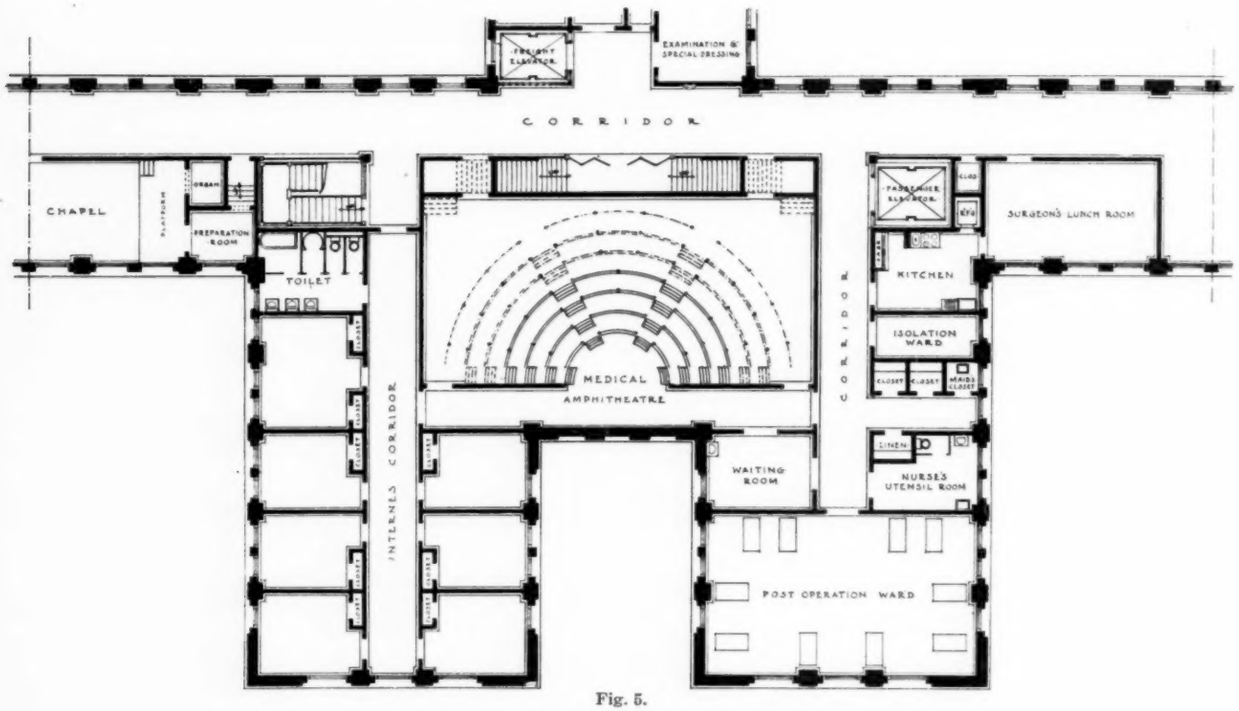


Fig. 5.

The pathologic laboratory is designed only for the examination of fresh specimens and frozen sections. It is located in such a way that members of the operating floor in order that the visiting staff may examine such patients with a minimum loss of time.

Fig. 6.

On the first floor of the service building, on the north side, are located the admitting ward and the accident room. The outline of this space is shown in Fig. 4. There is a receiving ward of five beds for males and a like ward for women; also isolation and examination rooms. It is expected that all patients will be detained here for a preliminary examination. They will be bathed and prepared for admission to the wards, their clothes being receipted for and sent to the basement, where they will be fumigated and stored.

The accident room provides for two operating rooms, an etherizing room, a small sterilizing room, and four examining rooms.

In the western operating room there will be a steam-heated shock table after the pattern of the one at the Massachusetts General Hospital.

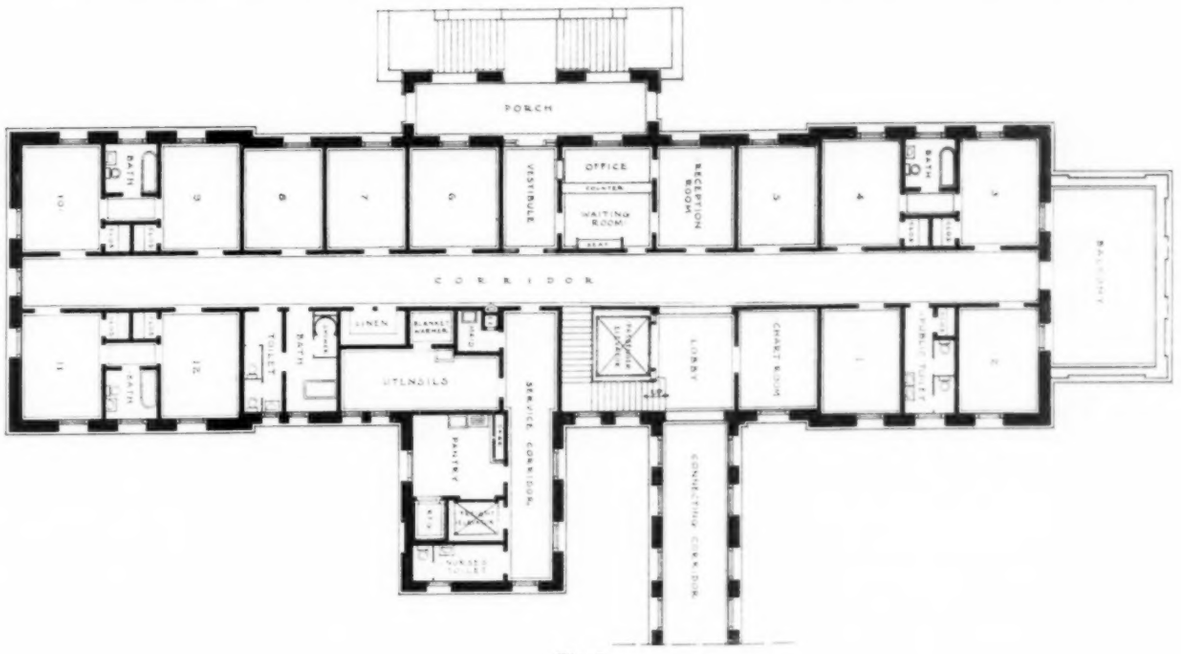


Fig. 7.

In the administration building, on the same level with the operating pavilion, is located the children's post-operative ward, which is illustrated in outline in Fig. 5. This provision for ten to twelve children during such periods as it may be neces-

sary to keep them after operation will afford ample space for the surgical work of the St. Louis Children's Hospital, that hospital being provided only with a small operating room for emergency and minor cases.

The outline of the small metabolism ward, occupying the west half of the second floor of the administration building, is shown in Fig. 6. This, with its special equipment, affords ideal conditions for such technical research.

The arrangement of the actinographic department, which is situated on the east half of the same floor as the metabolism ward, is shown in Fig. 6. By this arrangement of space the dark room is made accessible for photographic and x-ray work, and the treatment of patients in no way interferes with the routine.

On the third floor is the medical amphitheater, which has a seating capacity of 100, and is equipped with projection apparatus for purposes of demonstration.

Fig. 7 gives the outline of one of the three floors of the private pavilion. Here, as in the wards, the service has been centered in the less desirable portion of the building and the sweeping exposure toward the park reserved entirely for the rooms. At either end on each floor are rooms arranged so that they may be taken with private bath or en suite. The remaining rooms are separate and single.

The house staff are quartered in the upper floors of the administration building. They are provided with single bed rooms, a large sitting room and library, and a porch with southern exposure.

Ample space has been reserved in the basement of the administration building for hydrotherapeutic and mechanotherapeutic departments, but, as the arrangement presents no special feature, it has not been figured.

In the service building are the various kitchens, one general one for the private pavilion and one for the house staff and nurses; also separate dining rooms for the house staff, nurses, and employees.

Theodore C. Link & Son, of St. Louis, are the architects, and Dr. S. S. Goldwater, of New York, is the consulting specialist for the hospital.

THE GREAT NEED OF AMERICAN HOSPITALS—MORE AUTOPSIES.

If the Medical Profession Is to Profit by Experience, the Example of Europe Must Be Followed.

By THEODORE C. JANEWAY, M. D.

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AMERICA is preeminently a land of contrasts. No fact so forcibly impresses the visitor from abroad. Not only are wide differences in material prosperity and cultural development evident between the different sections of the country, dependent upon the persistence of frontier conditions in the most newly settled states, upon differences in race and in climate, but even the oldest parts of the United States possess populations so diversified as to make impossible any such uniformity of development as the European countries enjoy.

The hospitals of the United States have arisen to meet the needs of the sick of this strangely mixed population. Shelter, food, and nursing have of necessity been the first demand. The next in many cases has been for an environment in which the sick man might find himself at home and meet with the sympathy that he craves. In response to this very natural longing, hospitals have been built throughout the United States by religious denominations and by national groups, often with funds inadequate to provide more than the barest physical and spiritual necessities of the moment and without any resources for their equipment as scientific institutions. There exist in the United States few very large general hospitals, such as may be found in any foreign city, because of the widely different customs and prejudices of the people drawn from every corner of the globe and American as yet only in name.

During the last twenty-five years, however, the resources of the hospitals of the United States have increased enormously, both private and public. In the magnificence of operating rooms, in the general appointments of the wards, still more of the rooms for private patients, the character of the nursing, and the general hospital service, our better hospitals throughout the country leave little to be desired. In a few municipalities, as well, public hospitals are being developed which, in the magnitude of their plant and their facilities for the care of the sick, may rank with the best continental hospitals. Until very recently, however,

all this physical growth has been in striking contrast to the ideals and organization of the hospitals as institutions for the advancement of medical science. These have remained for the most part as they were in the days of the small beginnings of hospital development in this country. During the past few years, however, the influence of the Johns Hopkins Hospital—founded equally for the education of the physician and the advancement of medical knowledge, together with the care of the sick, and the observation by Americans of the work of the foreign hospital clinics—has made itself felt. Hospitals in the larger cities—slowly at first, now rapidly—are throwing open their doors for the education of students and physicians, and are reorganizing their medical staffs along lines which universal experience has shown necessary to administrative and educational efficiency and scientific productiveness. In many cases considerable sums of money have been given for the prosecution of scientific investigations. During the same time princely endowments have made research institutions of the first rank spring into being almost like magic.

Yet at one point, and that the pivotal point about which all the scientific activities of a hospital must revolve, progress has stopped and retrogression even has taken place. That point is the post-mortem room.

The systematic autopsy, as the means of detecting the seat of disease in the body and the character of the changes produced, began with Morgangi's life work, culminating in his famous publication in 1767. He first on a large scale arrived at a correct interpretation of the symptoms observed during life by tracing them to the lesions found after death. Until Morgangi's time ideas about the nature of disease were of the most visionary kind, and diagnosis consisted only in the recognition of certain well-defined types or symptom groups. Since Morgangi's time the whole development of medicine as a science and practical art has been bound up with the making of autopsies. Developing next in France under the great pathologist Bichat, the French physicians, especially the great Laënnec, developed the methods of physical diagnosis through constant comparison of signs they elicited during the patient's life and changes in heart or lungs which they discovered at the autopsy. They were indefatigable workers in the dead-house, and the vast material of the Paris hospitals made it possible for them in a few years to make the diagnosis of heart and lung diseases almost as accurate a branch of medical science as it is today.

In the middle of the last century the center of most active pathological investigation was transferred to Vienna, where Rokitansky performed an incredible number of autopsies. At once Vienna replaced Paris as a center for clinical study and for the advancement of clinical medicine, and Skoda perfected the methods originated by Laënnec. In England, during the same time, the great trio of Guy's Hospital physicians—Bright, Addison, and Hodgkin—made their names immortal in connection with the well-known diseases whose nature they laid bare at the post-mortem table. Stokes and Graves and Corrigan in Dublin were also making their great contributions to practical medicine. Then came Virchow, by his genius extending the scope of the autopsy to the microscopic investigation of the tissues, and revolutionized medicine by the cellular pathology which he thus founded. Virchow also perfected the technic of post-mortem examinations, both for scientific and for medico-legal purposes. Through his life work Germany gained the preeminence in medicine which she holds to this day. The pathological institute is an indispensable part of every German hospital, and its work is considered just as essential to the purpose of the hospital as is that of the physician in his wards or the surgeon in his operating room. No money is spared to make the equipment of the pathological institute, both for the conduct of routine autopsies and for teaching and research, as perfect as possible. The spirit of such an institute is well expressed in the Latin motto above the doors of Virchow's old institute in Berlin—*His est locus ubi mors gaudet succerere vitae.*

The rapid progress in medical knowledge which followed Virchow sent a wave of enthusiasm for the study of pathological anatomy around the world. In the late sixties the young men who were to be the leaders in American medicine in the next generation began to make systematic autopsies. In New York City Dr. Francis Delafield, Dr. J. W. Southack, and my father were appointed curators of Bellevue and Charity hospitals, and by 1870 a large number of autopsies were being performed. In the early days difficulties were often encountered, and at times my father met with threats of physical violence. But the enthusiasm of such men as these soon overcame all obstacles, and in our public hospitals autopsies on important cases were seldom lost.

The profession as a whole, however, was not educated along fundamental pathological lines, and outside of the large public hospitals little work was done. Gradually, however, the introduction of laboratory methods of diagnosis, the need for the microscopic diagnosis of diseased tissues removed at surgical operations, and the occasional autopsy led even the smaller private

hospital to appoint pathologists, whose work was largely confined to helping the clinician by the use of methods which the latter could not apply. The equipment of most pathological departments in American hospitals has been very meager, and to this day the making of autopsies and of investigations based thereon has, with few exceptions, constituted a small part of the work of such a department. In a few hospitals, such as the Boston City Hospital at one period of Dr. Mallory's work, a large number of autopsies made possible a real pathological institute in the German sense. For a few years, until it met with political obstacles, the Russell Sage Institute of Pathology, under Dr. Horst Oertel, was conducted along thoroughly continental lines at the City Hospital in New York. The new Bellevue Hospital in New York City now possesses a large pathological building fully equipped in every particular, and is prepared for the best sort of anatomical as well as chemical and bacteriological study, if it ever becomes possible to procure sufficient autopsies to afford material for investigation.

During this time the importance of the pathologist, both as teacher and as head of a department essential to a hospital, has become clear to all, and America has produced a few pathologists of the widest reputation. At the present time, however, because of the infrequency of autopsies in our hospitals, American pathologists are for the most part engaged in experimental work along other lines, and pathological anatomy is prosecuted to a surprisingly small extent as compared with other countries. This is the greatest detriment to the development of practical medicine in America. Just how serious the present situation is will be clear from a report on post-mortem examinations in the United States by the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine.[1] The statistics were compiled by E. H. Lewinski-Corwin, Ph. D., executive secretary of the committee.

STATISTICS OF AUTOPSIES IN AMERICAN HOSPITALS
(exclusive of medico-legal cases)

Name of institution	Year	Number of deaths	Number of autopsies performed Total	Percent
Bellevue Hospital, New York, N. Y.	1910	2968	301	10.1
	1911	3035	354	11.6
	1912	2915	343	11.8
Fresbyterian Hospital, New York, N. Y.	1910	1146	281	24.5
	1911			
	1912			
New York Hospital, New York, N. Y.	1910	460	103	22.4
	1911	524	87	16.6
	1912	457	94	20.6
St. Luke's Hospital, New York, N. Y.	1910	618	89	14.4
	1911			
Mt. Sinai Hospital, New York, N. Y.	1910	719		
	1911	738	158	7.3
	1912	765		
House of Relief, New York, N. Y.	1910	230	36	15.6
	1911	184	57	30.9
	1912	206	74	35.9
Massachusetts General Hospital, Boston, Mass.	1911	475	143	30.1
	1912	429	66	15.4
Boston City Hospital, Boston, Mass.	1910	1327	195	14.7
	1911	1483	113	7.6
	1912	1611	100	6.2
Louisville City Hospital, Louisville, Ky.	1910	698	120	17.2
	1911			
	1912			
San Francisco City and County Hospital, San Francisco, Cal.	1910	1486	670	45.1
	1911			
	1912			
University of California Medical School Hospital, San Francisco, Cal.	1910	66	18	27.3
	1911	51	22	43.1
	1912	37	21	56.8
New Haven Hospital, New Haven, Conn.	1910	254	37	14.6
	1911	235	16	6.8
	1912	269	23	8.5
Johns Hopkins Hospital, Baltimore, Md.	1910	551	346	62.6
	1911			
	1912			
Jefferson Hospital, Philadelphia, Pa.	1910	620	104	16.8
	1911			
	1912			
Buffalo General Hospital, Buffalo, N. Y.	1910	896	117	13.1
	1911			
	1912			
Albany Hospital, Albany, N. Y.	1910	239	24	10.
	1911	268	22	8.2
	1912	272	13	4.8
Philadelphia General Hospital, Philadelphia, Pa.	1910	2122	324	15.3
	1911	2050	293	14.3
	1912	1749	196	11.2

STATISTICS OF AUTOPSIES IN FOREIGN HOSPITALS
(exclusive of medico-legal cases)

Montreal General Hospital, Montreal, Quebec, Canada	1908	292	235	80.4
	1909	294	229	77.9
	1910	272	235	86.4
Royal Victoria Hospital, Montreal, Quebec, Canada	1910	297	...	73.
	1911	267	...	62.
	1912	264	...	67.8
Toronto General Hospital, Toronto, Ontario, Canada....Oct., 1911 to Sept.,	1912	321	82	26.3
University College Hospital, London, Eng.	1910	333	276	82.8
	1911	284	244	85.9
	1912	257	217	84.4
St. Thomas' Hospital, London, Eng.	1910	622	468	75.2
	1911	676	486	71.9
	1912	611	473	77.4
St. Bartholomew's Hospital, London, Eng.	1910	2010	1597	79.4
	1911			
	1912			
Royal Infirmary, Edinburgh, Scotland	1910	2466	1453	58.9
	1911			
	1912			
Another large English hospital whose name cannot be divulged	1910	4037	3378	83.7
	1911			
	1912			
Charite Hospital, Berlin, Germany[2]	1910	1588	1480	93.
	1911	1597	1472	92.
	1912	1527	1419	92.
Eppendorf Hospital, Hamburg, Germany[2]	1908	2322	2012	86.
	1909	2417	2181	90.
	1910	2487	2220	89.
St. Georg Hospital, Hamburg, Germany[2]	1908	1272	1129	88.
	1909	....	1218	....
	1910	....	1168	....
Pathological Institute, Leipzig, Germany.	1900	1082	1018	94.
	1901	1224	1139	93.
	1902	1246	1160	91.
	1903	1325	1213	91.
	1904	1385	1258	90.
	1905	1516	1352	89.
	1906	1562	1383	88.
	1907	1719	1531	89.
University Hospital, Breslau, Germany	1905	....	487	90.7
	1907	....	534	91.9
	1908	....	570	93.4
Allerheiligen Hospital, Breslau, Germany.	1905	....	715	70.5
	1907	....	1038	87.6
	1908	....	1077	89.8
Allgemeines Krankenhaus, Vienna, Austria	1903	1950	1793	91.
	1904	1867	1866	99.9
	1905	1929	1875	97.
8 other hospitals in Vienna, Austria	1903	6690	5213	77.
	1904	6820	5517	80.
	1905	7364	5722	77.

Examination of these statistics reveals at once the immense difference in the frequency with which autopsies are performed in the hospitals of this country as compared with foreign hospitals. This difference is not only relative, but absolute. The

[1] Jour. Am. Med. Assn., 1913, LV, 1784. The reader is urged to consult the full report. The historical study of the autopsy by Dr. Oertel, which forms part of it, demonstrates the necessity for systematic post-mortem examinations.

[2] The remaining percent includes not only refusals, but legal cases.

great majority of European hospitals surpass in size all but our very largest municipal institutions, so that the total number of post-mortem examinations in many of them is between 1,000 and 2,000 a year, whereas the largest number in any institution in the United States during the past three years was 354 in Bellevue Hospital. The total experience, therefore, both for the pathologists and for the physicians of our hospitals is at best exceedingly small as compared with the experience which can be gained during a corresponding time in Europe. Still more serious is this for the medical student. Whether a medical school be large or small, it must endeavor to teach all that is important in medicine. A small school connected with a small hospital is not able, because of its smallness, to teach its students pathological anatomy and clinical medicine from a small number of autopsies. It is essential that the students should see examples of all the more important pathological lesions, and for this purpose a long series of autopsies is needed. For ward teaching a smaller number of illustrative cases, well studied, may compensate somewhat for the lack of a large and varied clinical material. But proper instruction in pathology is only possible where a large autopsy material is available. The result is clearly seen in the United States. Medical men come into contact so little with autopsies as students that they have not even been convinced of their importance, and the indifference of the rank and file of the medical profession toward the performance of autopsies is, in my opinion, one of the chief obstacles to the obtaining of autopsies in our hospitals. This makes a vicious circle.

If the total number of deaths in our comparatively small hospitals limits the amount of available material for pathological study, how much more important is it that examinations be conducted in the case of all who die. Yet, when the figures are compared, it will be seen that, with a few notable exceptions, autopsies have been performed during the last three years on from 4.8 to 24.5 percent of the dead in most of our institutions. These exceptions are the Johns Hopkins Hospital, with a percentage of 62.6; the two San Francisco hospitals, and the House of Relief in New York, a small institution for the care of advanced tuberculosis. Particularly notable is the very small percentage of autopsies in the large municipal hospitals, where formerly post-mortems were done with the most frequency and where they should be obtained with the greatest ease because of the character of the patients. Still more alarming is the decrease in the number and percentage of the autopsies during the last three years in the case of some of the best known of these institutions, notably the Boston City Hospital, where the percentage has fallen from 14.7 to 6.2, and the great Philadelphia General Hospital, where the decline has been from 15.3 to 11.2. The same tendency is seen in smaller hospitals in New Haven and Albany. In Germany and Austria, on the other hand, the figures run from 77 to 99.9 percent, and in England from 71.9 to 85.9. The most striking contrast, however, is afforded by merely crossing our northern border. The two great hospitals of Montreal have averaged from 62 to 86.4 percent of autopsies. On the other hand, Toronto shows but 26.3 percent, a figure comparable with those in the private hospitals of the United States. Wherein lies the explanation?

These figures have been very carefully studied by the committee of the New York Academy of Medicine above mentioned, of which I am a member. The conclusions arrived at were that five causes may be assigned for the very poor record of our hospitals in this matter—first, adverse public opinion and prejudices; second, the existing law, particularly of New York state; third, the adverse interests of undertakers and burial societies; fourth, hospital rules; fifth, claims of the departments of anatomy in our medical colleges.

The importance of adverse public opinion is probably most clearly seen in contrasting the high percentage of autopsies at the Johns Hopkins Hospital with the low percentage at similar institutions in New York and Boston. While differences in the law account for some of the discrepancies, the main reason that can be assigned for the success of the Johns Hopkins Hospital in obtaining autopsies is that they have attempted to obtain autopsies systematically for so many years that they have educated their community to an appreciation of their value. Wherever adverse public opinion exists, the only means of overcoming it lies in education by the medical profession and the hospitals. The population of this country, where foreign-born, is recruited from lands where it is taken for granted that an autopsy will be performed upon every patient who dies in a hospital. I believe that the medical profession of this country is largely responsible for the growth of this prejudice against autopsies; that, had American physicians for the last fifty years, in hospital and private practice alike, insisted upon the importance of an autopsy in every death occurring in their practice, post-mortems in the United States would now be about as frequent as they are in London.

There are signs of increasing activity in the profession in this respect, which permits of the hope that this disgrace of American medicine may

before long be a thing of the past. Such a demonstration of the inaccuracy of diagnosis as was published by Cabot[3] reaches a far wider public than the subscribers of the *Journal of the American Medical Association*. The American people as a whole are beginning to learn that their physicians do not possess infallibility. They are finding that Cabot's studies of 3,000 autopsies in the Massachusetts General Hospital showed that, while the best physicians in the country might make a diagnosis of diabetes and of typhoid fever correctly oftener than nine out of ten times, these same physicians failed to recognize abscess of the liver and acute pericarditis eight times out of ten, and that even such severe diseases as acute tuberculosis and aneurysm of the aorta were about as often overlooked as discovered during life. Patients, therefore, begin to ask themselves in what proportion of cases do ordinary practitioners without hospital experience recognize the disease they are treating, and, if not recognized, what does this mean for the efficacy of their treatment. We must all recognize the extreme complexity of the human machine when it gets out of order, and that absolutely correct diagnosis is not to be looked for. But is it not evident that the public will soon appreciate that, without the control and constant education of the autopsy, their physicians will speedily fail to recognize their own limitations, and that without opportunity to learn from their mistakes there can be no right progress? It is the duty of every American physician and every American hospital to see to it that these facts become known.

Pressure is likely to come also from the public in its corporate capacity as state or municipality because of the revelation which these things make of the senseless inaccuracy of American mortality statistics and everything that is based upon them. In particular, the life insurance companies are interested in this matter. The *American Underwriter* for May[4] contains a study of this problem by Dr. Oertel, with five pages of editorial comment, evincing a very lively practical interest in autopsies as the only adequate basis for accurate vital statistics. Dr. Oertel recently studied the autopsy records of a large public hospital with reference to the correctness of clinical diagnoses in 390 cases, with the following results:

	Cases.	Percent.
1. Clinical diagnosis confirmed	87	22.3
2. Clinica' diagnosis correct, but autopsy disclosed important additional lesions. (Example—lobar pneumonia diagnosed correctly, but autopsy showed cancer of uterus in addition)	116	29.7
3. Clinical diagnosis partly correct, but other important lesions that had contributed to the diagnosed lesion were found. (Example—acute peritonitis diagnosed correctly, and autopsy showed a perforated gastric ulcer)	54	13.8
4. Clinical diagnosis not confirmed	109	27.9
5. No clinical diagnosis	24	6.2
	390	99.9

[3]Cabot: Diagnostic Pitfalls.—Jour. Am. Med. Assn., 1912, LIX, 2295.
[4]The American Underwriter, 1913, XXXIX, No. 5.

Consider that only in 87 cases out of these 390 did the autopsy fail to reveal important lesions not recognized during life! Consider further that in that same hospital nearly 2,700 other patients died and were buried in 1912 without autopsy; that both the rules of the hospital and of the Health Department required that an absolute diagnosis be written on the death certificate by the house physician, whether any diagnosis was possible during life or not; that our vital statistics in New York City are based upon these diagnoses and such as are made by private physicians, which are not likely to be more accurate than hospital diagnoses, and a statement of Professor Bashford in a recent lecture will not seem wholly fanciful—"The vital statistics of Ceylon are more reliable than those of New York."

Perhaps another reason for the disrepute of autopsies in this country has been the character of public officials charged with the duty of inquest in suspected criminal cases. In all foreign countries legal medicine is a branch of scientific medicine, and medico-legal autopsies are conducted by university professors of learning and experience. In this country these matters are in the hands, for the most part, of coroners and their appointees, the coroners themselves being usually politicians, rarely with even the pretense of a medical education. They are dreaded by families with whom they are brought into official contact. In addition, in New York City, at least, they have in the past frequently interferred with the performance of autopsies in private hospitals and have led to an unwillingness on the part of managers of hospitals to permit autopsies except in accordance with the strictest interpretation of a confused and often unintelligible law. The reform of medico-legal autopsies should be an essential part of any program for the promotion of pathological anatomy in the United States.

The laws relating to the performance of autopsies are a much more serious hindrance in some states than in others. They are especiallly troublesome in New York state. The great contrast between the laws in this country and the British or foreign enactments lies in the assumption, under the American laws, of property in a dead body and the possibility under them of action to recover damages for injury to the feelings and mental suffering by relatives of the deceased on account of the performance of an autopsy. The discussion of the legal side of the question would go beyond the possible limits of this article, but the requirement of written consent, and the occasional recovery of damages from boards of managers of private hospitals because of the performance of autopsies, have been the chief reasons, in

New York City, at any rate, for the decrease in autopsies in recent years. In England such law suits are practically unknown, and autopsies are regularly performed unless forbidden by the relatives. The same holds good in the province of Quebec, and explains the large percentage of autopsies in the Montreal hospitals. On the continent a post-mortem is always undertaken unless there is express prohibition by the family. The amendment of inadequate and antiquated laws in this country is a necessary step toward securing more frequent autopsies. Wherever attempted, it must be borne in mind that the present laws were passed before the growth of modern pathology, and did not recognize the difference between the use of the cadaver for anatomical dissection and the instruction of students therein on the one hand, and an autopsy for the discovery of disease on the other. This distinction should be made clear in our legal enactments.

Undertakers and burial societies are certainly much more active in this country than elsewhere in the world. The latter frequently prevent autopsies because of religious prejudices, and operate to prevent the use of the bodies of a certain number of the unclaimed dead in our public hospitals from serving the needs of science. The opposition of undertakers is a matter of importance to the hospitals. An opportunity has recently been afforded in New York to discover some of the causes for this opposition. Professor MacCallum, Professor Ewing, Dr. Bovaird, and myself were permitted to address a meeting of the New York City Undertakers' Association on the subject of the importance of post-mortem examinations and to hear from them their views on the same subject.[5] They have certain definite grievances against the hospitals in this connection which are deserving of careful consideration by superintendents, physicians, and pathologists. The length of time they or their assistants are kept waiting for the bodies and the treatment that they frequently receive at the hospital office are legitimate causes of complaint. Collusion between subordinate employees of the hospitals and certain undertakers in the attempt to divert business to them is another. Criticism of unnecessary mutilation by inexperienced pathological assistants was freely expressed. This is a matter for serious consideration by directors of pathological departments. Professor Chiari, of Strassburg, in a lecture before the Harvey Society in 1910[6] said, "Naturally the autopsies must be done with the strictest adherence to the principles of humanity, with careful consideration for the wishes of the relatives, and the greatest precautions to avoid any mutilation of the body. To this end pathology has at its disposal a well-developed technic which is constantly being improved."

House physicians frequently like to show their authority by holding up death certificates in a quite unnecessary way, and a little friendly cooperation on the part of all concerned, administrative force and physicians alike, might succeed in obtaining the very valuable cooperation of the undertaker in securing the right to perform autopsies.

The greatest difficulty, however, is connected with embalming. In this country, for reasons which it is unnecessary to discuss, embalming of the body is becoming customary even among the poor. This, I believe, is not at all the case in other lands. A thorough autopsy makes embalming a very difficult task, and removal of the brain makes it practically impossible. It seems possible that by consultation with undertakers a method of preserving the arteries necessary to the embalmer might be worked out and yet a complete autopsy performed. This would go further than anything in securing the undertakers as allies.

Hospital rules dealing with this matter are merely the expression of the mental attitude of hospital authorities toward the scientific work of their institutions. The point of view of the hospital managers is the resultant of the purposes and ideals of the original founders, modified by the experience of their successors with their medical staffs. Hospitals organized primarily as denominational charities rarely start with any appreciation of the importance of scientific training for their physicians. Too frequently in the past they have even looked on it as antagonistic to the humane impulse, which is their first requirement. As a result they seldom choose members of their medical staffs because of their scientific productivity, but for their race, their religion, their social or political influence, or, at the best, their reputation as successful practitioners. Such a process of selection, in its turn, deprives the managers of the opportunity of becoming educated scientifically by the physicians with whom they work. Hospital physicians of this type only exceptionally develop keen scientific enthusiam, and, to their shame be it said, have even been known to dislike autopsies on their patients because of the unpleasant revelation of their own mistakes.

In hospitals of this type, and there are still many of them in the United States, progress is slow, and depends upon the influence of the pathologist, or of some single medical man or manager

[5] A stenographic report of this meeting was published in the Director, Tribune Building, N. Y., May, 1913, V, No. 5.
[6] Harvey Lectures, 1910–1911, J. B. Lippincott, Phila., p. 16.

of broader outlook than his fellows. The only remedy lies in the education of succeeding generations of medical students to a better appreciation of the fundamental importance of pathological anatomy and to a love of the truth above all success, and of hospital boards to a realization that only scientific enthusiasm, which is another name for the thirst for knowledge in a particular field, can insure hospital physicians whose efficiency and devotion will grow with the years. To build a hospital without such physicians is to make bricks without straw.

In municipal hospitals growth along scientific lines is subject to great setbacks. The whole policy of these institutions may change with each political overturn in the city, and all that has been gained from past experience may be lost. Were the medical staffs of these hospitals united in their devotion to high scientific ideals, the effect of such political accidents could be minimized. Unfortunately a process of selection for political reasons does not result in staffs with such ideals, and the progress achieved by the few will always be endangered by those whose loyalty is political and not medical. If the worst results of party politics and boss rule can be seen in some of America's largest hospitals, so the worst side of the American medical profession will be seen cooperating to produce these results. Complete dissociation of hospital administration from politics and the elimination of the political doctor are tasks for the American people and the American medical profession to set about earnestly.

Only a single American hospital requires signed consent for an autopsy from the nearest relative before admission of the patient. No other procedure under our present laws can accomplish the desired result in every case. At the other end of the scale stand the hospitals whose administrative departments are openly or secretly antagonistic to the securing of post-mortems. In one hospital in New York city members of the staff are not allowed to interview patients, or relatives after death, and an autopsy is secured only through the mediation of the clerks. The percentage for that hospital shows quite clearly that this method does not contribute toward frequent autopsies. Where the hospital superintendent or his assistant is a medical man, conditions are usually better. There is no question of the assistance that can be rendered by hospital offices in this respect. Where the office fails to secure the necessary consent, I believe that the interested members of the staff should be called upon to interview the relatives before they leave the hospital. Unfortunately, in our large cities relatives frequently do not come to the hospital, but send the undertaker, and the difficulties are thus increased. Even under our present laws, however, a group of medical men scientifically keen, enthusiastic for getting as many autopsies as possible, and invariably courteous and considerate to patients and their relatives, can with the cooperation of the hospital superintendent obtain a very considerable number of autopsies.

If it were possible for all of the larger hospitals of the United States to agree upon a certain date that signed consent to an autopsy in case of death should be made a condition for the admission of patients, the problem of autopsies in hospitals would be solved. No hospital can do this single-handed, but I believe that a considerable group of hospitals could accomplish it without disturbance. I would urge this on the careful consideration of superintendents and boards of managers.

The conflicting claims of the departments of anatomy need not concern hospitals, though they do universities. I believe that a proper law regulating the disposal of dead bodies would afford abundant material for anatomical study without denying the legitimate claim of the hospitals that the careful study of patients in their wards shall not be allowed to go for nothing because of the failure to obtain an autopsy. At the present time in New York state all bodies of the unclaimed dead go to the departments of anatomy, and autopsy is not permitted upon them. It sometimes results that a patient on whom the most elaborate studies have been conducted for weeks, or even for years, dies, and his body becomes ordinary dissecting room material, while knowledge of cerebral localization or some other information of great moment, which could be afforded only by the completion of the record by post-mortem examination, is altogether lost. So far as real usefulness is concerned, this is about as justifiable economically as casting pearls before swine.

I know of no factor at the moment which operates so strongly to discourage careful clinical investigation in the wards of our hospitals as the probability that for three-quarters of the patients studied the results will be lost in the case of death by failure to secure an autopsy. The advance of medicine today is increasing along the lines of study of the early stages of the chronic diseases in the attempt to trace causes and to achieve means of prevention or arrest of these diseases in their incipiency. For the success of such studies it is essential that they be prosecuted over long periods and that the final test of the autopsy be afforded. It is not without significance that the amount of such investigation now being carried on in American hospitals is so small as compared with the activities in this direction abroad. The

difference is about proportioned to the difference in the frequency of autopsy, and, while perhaps the latter does not explain the former wholly, it is responsible to a much larger extent than is generally appreciated. Beyond this, both facts are traceable to a common cause—the as yet undeveloped state of medical science in America.

The United States has not an independent school of medicine, but must take much from Europe. Especially in pathological anatomy our profession must be a recipient and not a giver, a learner and not a teacher. Until the opportunity for pathological research in America becomes equal to that in Europe, through freedom in the performance of autopsies, so long will American medicine follow and not lead, and this opportunity must come to American medicine through the American hospitals.

BOSTON NEW CHILDREN'S HOSPITAL HAS NOVEL FEATURES.

Air, Sunshine, and Limitation of Infections Are Chief Factors—Designed After the Indian's Tepee—Administrative Economy Sought.

By A MEMBER OF THE EXECUTIVE COMMITTEE OF THE HOSPITAL.

IN planning for the new Boston Children's Hospital three things were kept constantly in mind—(1) fresh air, (2) sunshine, and (3) the limitation of contagious disease.

1. *Fresh Air.*—No artificial system of ventilation for the wards seemed satisfactory. None takes the place of open windows, and ordinary windows, even when freely opened, do not ventilate perfectly because of the more or less dead air at the top of the room. The Indian tepee is ventilated satisfactorily by the hole at the top, and the monitor roof is an adaptation of the same principle, though the corners and angles between the roof and the side walls may, especially if the slope of the roof be slight, hinder somewhat the absolutely free passage of air upward, such as is possible in the cone-shaped tepee. The ground space, however, did not permit of a sufficient number of one-story pavilions, and therefore one monitor roof pavilion was superimposed upon another. This plan had originally been devised at the Massachusetts Hospital School in Canton by Dr. Bradford, Dr. Fish, and the architect, Mr. Mead.

The accompanying sketch shows a cross section of the two-story pavilions. The ventilation of the lower story is practically as free as of the upper. A coarse lattice covers over the space between the roof of the first story and the floor of the second. The exposed portions of the floor of the second story are thick and are insulated sufficiently to keep the floor warm.

With this thorough ventilation of the wards no special consideration has been devoted to cubic air space. On the front of the building sliding doors allow the beds to be wheeled out freely on to the piazza, and at the end of each ward is a solarium which can be freely opened, and into which the beds may be pushed.

2. *Sunshine.*—The problem in winter is entirely different from the problem in summer. In summer the sun runs high and does not at midday enter the wards to any extent. It is essential in summer that the piazzas should be in part shaded from the sun. In winter the sun runs low, and it is desirable that it should enter the wards through the windows. In order to allow the sunlight to enter the wards, and to give better air

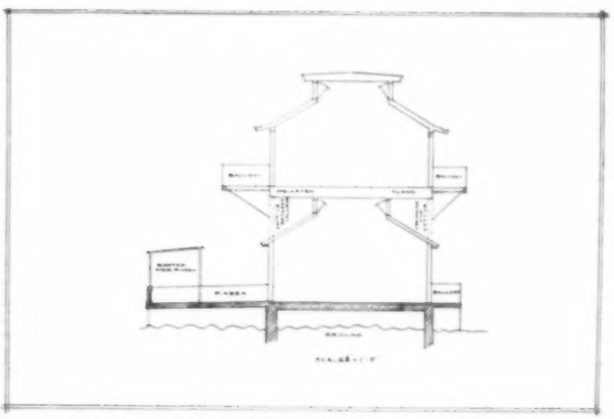

PLATE 1. CROSS SECTION OF A TWO-STORY PAVILION.
The superimposed monitor roofs are shown. The upper pavilion is supported on columns, between which are placed coarse lattices. The roof over the outer part of the piazza is shown.

and light in the wards, the roofed-over portion of the piazza has been placed at the outer edge rather than next to the building. In this way in the winter there is no interference with the entrance of sunlight and air into the wards. A portion of the piazza is shaded in summer. The piazza on the second story is not as wide as on the first, and has no permanent roof. When shade is necessary for the second-story balconies, awnings must be depended on, or the solarium may be used.

3. *Limitation of Contagious Disease.*—The word "limitation" rather than prevention is used

intentionally. The contagious diseases which have to be guarded against are diphtheria, scarlet fever, measles, whooping-cough, chicken-pox, and vaginitis. Diphtheria is now the least dreaded of all. It is practically absolutely controlled by immunizing doses of antitoxin given every child as a matter of routine at stated intervals. Vaginitis

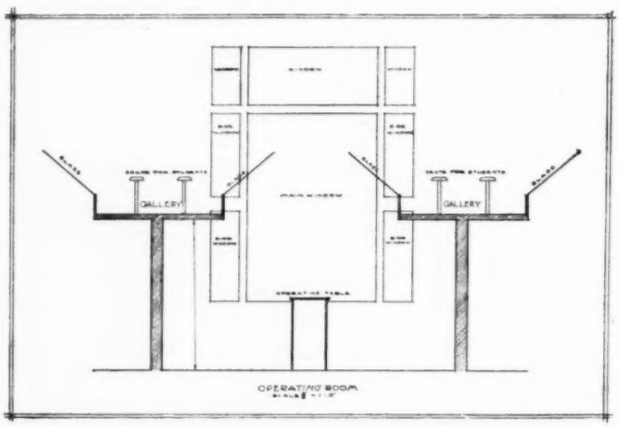

PLATE 2. CROSS SECTION OF THE MIDDLE OF THREE ADJOINING OPERATING ROOMS.

The low galleries almost overhanging the operating table and screened by plate glass are shown. The seats will each accommodate six students. More may stand behind the seats. Thus from the two sides as many as twenty-five or thirty may have a good and near view of the operating field.

is controlled by rigid isolation, and by the utmost care that everything which comes in contact with the patient shall be absolutely sterilized. Bed pans, thermometers, napkins, and nurses' hands are the ordinary ways in which vaginitis is spread.

On account of the long incubation period of some of the other contagious diseases, all thought of having a probation ward was abandoned. Many patients do not stay as long in the hospital as the probationary period. The division of the ward into cubicles of glass or other material was considered, but did not seem advisable where common piazzas and a common solarium would be in constant use. The other alternative, which was adopted, was limiting the number of patients in a ward to ten—thus, if contagious disease breaks out in any ward, at the most only nine other children can possibly be infected. That ward can be placed in quarantine and the children discharged as soon as possible. The danger to individual patients and the interference with the work of the hospital are minimized. Adjoining each ward is an isolation room, to which any patient presenting the slightest suspicious symptoms may be at once transferred. To facilitate the administration of these small wards, the pavilions are so arranged that one head nurse and one night nurse can be responsible for two wards.

The accompanying ground plan shows how the head nurse may from her desk between the two wards look into the kitchen, into the isolation room, may see every bed in each of the wards, may see the solarium and the piazzas, thus having under her eye two entire wards.

The administrative part of the hospital, the nurses' home, and the out-patient department are in one large building, with three wings. The patients coming for admission to the hospital enter by the central door at the street level. They pass into reception rooms, off which there are separate examining rooms. Between each two examining rooms is a bath room. There is thus opportunity for careful examination of the children and for thorough bathing of the children before they enter the wards. Patients being admitted to the house through the out-patient department may reach these examining and bath rooms from the other side.

The x-ray department is in the main building, and is accessible from the out-patient department in one direction and from the house in another direction. Thus with one x-ray plant there need be no mingling of house cases and out-patient cases.

The out-patient department occupies one wing of the main building. Patients enter on the street level. Any case presenting suspicious

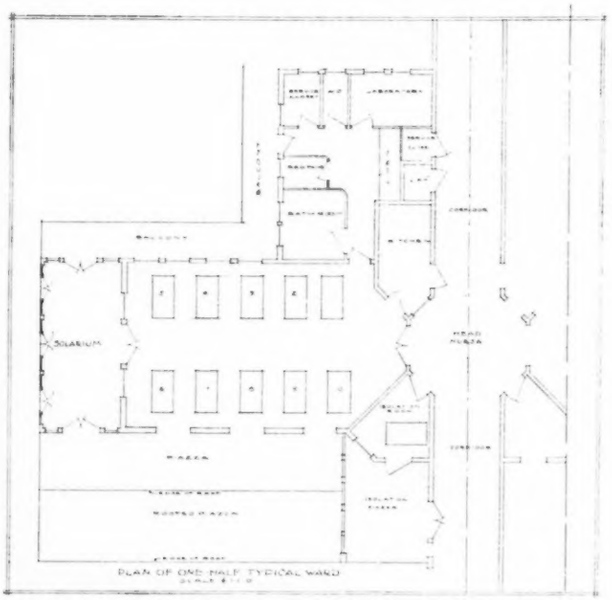

PLATE 3. GROUND PLAN OF THE PAVILION WARDS.

The wide front piazzas roofed over at the outside only are shown. The beds may be pushed out on to the piazzas through large sliding glass doors in the front of the building. The head nurse from her station may see whatever is going on in each of the two ward units.

symptoms of contagious disease may be at once sidetracked into a small suite of examining rooms, from which there is an independent exit, and thus any child having contagious disease may be prevented even from entering the waiting room.

The pharmacy is near the main entrance. The record stacks are in the basement, and the records

are to be sent by mechanical carriers to the different departments. The surgical appliance shop is in the basement of the out-patient department.

The first floor is devoted to the orthopedic and surgical departments. The second floor is devoted to the medical and nervous departments. The third floor is devoted to the throat, eye, and ear departments, and to the lateral curvature department and gymnasium. The fourth floor is devoted to private patients and a dispensary ward, in which out-patients who have been operated upon may be kept temporarily. There are no other points of special interest in regard to the main building. One wing is devoted to the nurses' home.

In the surgical building there is an amphitheater, which may be used for lectures to a large audience or for any surgical operations which are to be demonstrated to a large number. Such occasions, however, are rare. Almost all of the operating will be done in small rooms, where careful provision has been made for the accommodation of a relatively small number of students. The accompanying cross section plan shows the middle of three adjoining operating rooms. Students are admitted by a separate entrance to galleries, which are only 6 feet 8 inches above the floor. In order to prevent dust and saliva coming down upon the operating field, plate glass screens are placed at an angle between the seats on which students sit and the operating table. In this manner the students' eyes will be within less than 7 feet of the operating field, and will be almost over it. The rooms are large enough for a few men to come on to the floor if it is desired, but it is hoped that operations can be more clearly seen and better demonstrated to students in these overhead galleries than if they were sitting in amphitheater seats or in seats on the ordinary operating room stands. The angle at which the glass is placed has to be studied with reference to the light in the room in order to prevent annoying reflections.

In the general distribution the main building is toward the north, back of it are the two-story pavilions, and still further south of them are the one-story pavilions. Thus the maximum of air and sunlight is secured for each building.

IS PAVILION OR SKY-SCRAPER HOSPITAL BEST?

Comparisons of the Two Types and Arguments in Favor of the High Hospital in Crowded Sections.

By SAMUEL W. LAMBERT, M. D.
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THE fundamental question in hospital construction, whether multiple low buildings or a single high-storied structure is the more desirable, is still unsettled. If one limits a study of this subject to the writings of experts who are familiar only with European institutions, a single answer will be found to the question—all the authorities are unanimously in favor of the pavilion plan of construction. The only point concerning which they may differ is one of detail. These European writers, both those who consider the construction of hospitals from a medical point of view as well as those who consider it from the point of view of architects, are about equally divided on the question whether the separate pavilions should or should not be connected by corridors. This detail has a very important influence on the problem which is to be discussed here, and which concerns the possibilities of building a hospital of many superimposed stories free from serious architectural or hygienic errors. The solution of this secondary problem of connecting the separated pavilions by corridors, or of leaving the ward units entirely isolated from each other, would seem to be dependent in a very large measure on the extremes of climate which prevail in the locality where the hospital is to be built. In favor of such connecting corridors, one must consider the need of such a protection for the patients during transportation from one pavilion to another in the extremes of winter weather. On the other hand, one must decide that these corridors will not prove a detriment to the hygienic surroundings of the ward units by acting as a hindrance to the free access of fresh air and sunlight to the wards. The consideration of these two propositions would seem to be the determining factors to decide the question concerning the presence or absence of connecting corridors in any hospital plan. When the extremes of weather which exist in the northern section of the United States are considered, it must be decided that the corridors are absolutely essential in the winter months, and that their arrangement must be so fixed that the objections to them in the summer shall be at a minimum. The advantages of corri-

dors in the winter must, therefore, overrule all possible objections. The following discussion, therefore, of the pavilion or the block plan for hospital construction will be developed on the assumption that the several separated ward-unit pavilions must be connected by corridors, whether the single-story pavilion plan or the many-storied block plan be adopted.

The name "block plan" of construction is misleading—it originally meant a solid rectangular building several stories in height. Such a building permits only a single arrangement of central corridors, with wards on one or two sides of the corridor and which must look toward a single point of the compass. A better name for such a hospital is the "corridor hospital," as distinguished from the "pavilion hospital," which is, as the name implies, a hospital of more or less separated buildings, with wards exposed to two or even three cardinal points of the compass. There is no possible difference of opinion as to which of these two plans is the better. The corridor hospital is essentially bad in every respect except that of concentration of service. There is no doubt that the greatest amount of air supply and of sunlight exposure to the pavilion units, and also the surest avoidance of infection from one part of the hospital to another, are best accomplished in a hospital made of a series of ward units, either separated entirely or connected only by a series of corridors which are placed at one end of the pavilions and which are capable of a quick and thorough ventilation from the outside. This hygienic decentralization is an absolute necessity for a "healthy hospital" today. The question which it is the purpose of this paper to raise is that of how feasible it is to build a series of such decentralized pavilions by superimposing them one story above another.

It is estimated by Tollet, one of the earliest French authorities on this subject, that a hospital of 600 beds requires 9 acres of land in order that the arrangement of the buildings built on the pavilion plan may secure a proper interrelation of the separate buildings to each other and the most desirable exposure of all the buildings to the points of the compass. If one allows 25 patients to each ward unit, this would mean that four such units, or a hospital of 100 beds, would require at least an acre and a half. Such a plot of ground would represent a rectangle 250 feet by 250 feet, or a total of 62,000 square feet. One view of the question under discussion is, if a 100-bed hospital requires one and a half acres, can a hospital of 600 beds be placed upon such a plot of ground by piling up twenty-four ward units, arranged four on each story, in a hospital of which six stories are devoted to the ward units and three or four stories to the departments of nursing, housekeeping, and administration? Two of the principal points which must be solved before an answer can be given to such a proposition are primarily the cost, and secondly the possibility of securing an efficient hygienic decentralization in a "block" hospital made up of superimposed pavilions. In an article published in the Columbia University Quarterly last December such a hospital of about 700 beds was described. In that plan the upper seven stories were devoted to the housing of patients and the lower three stories were assigned to all the necessary departments of administration, dormitory, dispensary, and household uses. The result was a building ten stories in height placed upon a plot of ground 200 by 600 feet, and, in addition to the ordinary hospital rooms, space was provided for the scientific investigation and the teaching in medicine, surgery, pathology, and the medical specialties which are a necessity to a large medical school. Such a building will secure all the advantages of modern mechanical appliances that can be furnished by elevator service or telephone, by shortened routes for distribution of supplies and by a minimum of the service personnel. These advantages do not belong inherently in any pavilion hospital of the same size, which must be spread over six times as much ground area, and consequently will demand a larger number of persons in all departments in order to secure the same efficiency. There is no business plant which requires the same frequent transfer of persons from one department to another, the same need for rapid intercommunication with all parts of it, as does a hospital. It is evidently more difficult to apply mechanical means of transportation and of communication in a horizontal than it is in a perpendicular direction. Grober, the German authority, who has written the latest word on German hospitals, would seem to prefer man power to mechanical devices for hospital service, although he can offer no definite data as to the relative expense for both means of administration. The rate of wage for human service is so high, in America at least, that there can be no question that mechanical devices for service must be preferred to human power in this country. The cost of administration, therefore, would seem to favor very materially the more concentrated form of construction of superimposed pavilions, and in the long run that hospital will be the most successful which has the smallest fixed charges on its budget. The best test of successful hospital administration is to be found in the figure representing the average daily cost per patient per day, and the permanent reduction of all fixed

charges is the essential element in economic administration.

The actual cost of construction of the buildings, if considered alone, would undoubtedly favor the adoption of the single-storied isolated pavilion, and not the plan of a high sky-scraper building of superimposed pavilions, but the cost of the land must also be considered. In the present necessity of building large hospitals in congested centers of population, the cost of land will many times offset the increased cost of the tall building. These facts are very evident in the development of hotel and business structures in American cities, and the hospitals in those cities will be governed by the same considerations in the future. If the cost of construction plus that of the site is the same, or even quite a little greater, for the higher building, still the plan for a higher building will be chosen by preference because of the lessened cost of administration already referred to.

The test of the success of any hospital building is determined by the character and arrangement of the ward unit. The design of a ward and its adjunct apartments for medical and household service must determine the character of the rest of the hospital building. The centralization for service within the ward unit is equally as important as the centralization for service between the various parts of the hospital. As soon as the design of the ward unit is determined, all the rest of the hospital must be built around that, for every other department is subservient to the business of the ward—the care of the sick and injured. The ward unit must receive free supply of air and sunlight; have freedom from dirt, dust, and noise; there must be protection from the severe east winds, and a good cross ventilation by means of the windows. Each ward unit must be cut off from direct intercommunication of air and infection from every other ward unit and from other parts of the hospital. In the latitude and climate of the northern United States these objects are best accomplished by rectangular wards, with north and south long axis, with no obstruction toward the south, and with all the adjunct departments, for both household and medical service and for communication, situated on the northern end. A "block hospital" of superimposed stories can be built in such a way that these conditions can be fulfilled. Each pavilion ward unit can be arranged in a wing extending to the south, jutting from a more bulky main structure built along the northern side of the building site. Each floor devoted to wards would consist of as many of these pavilions placed side by side as could be accommodated when arranged at sufficient intervals from each other to prevent interference with the sunlight falling upon every pavilion. The stories of wards should be superimposed in sufficient number to accommodate the number of patients desired. The best part of any building for ward use is the upper portion, and the wards should occupy as many of the top stories as may be necessary. The height of each ward unit should approximate 15 feet, so that the connecting corridors placed between the northern extremities of the ward units may be of less height and built in the nature of enclosed bridges. Such connecting corridors of about 8 feet in height will allow the free circulation of air from the south to the north, or vice versa, between them even if it is deemed necessary to build them on every story. In such a grouping of ward units the hygienic isolation of the individual ward and hygienic relation to the climatic conditions and to the neighboring buildings can be secured whether the building be ten or even twenty stories high. This hygienic isolation can be insured by making the corridors for horizontal communication open to outside air ventilation, and by placing all stairs and elevators in shafts which can connect with each ward floor only through a system of double doors and an intervening vestibule. Such a building would be most desirable for city construction, and its usefulness would be enhanced if it could be placed where light and air may be borrowed from the surrounding neighborhood. Such a hospital should not be placed in a business center, where similar tall buildings would be likely to be built. If it is located in the neighborhood of a park, so much the better, but in any case it would be desirable that it should be placed where it would be likely to be surrounded by ordinary city homes or tenements four to six stories high. In this manner the upper stories which are devoted to the wards would be placed above the surrounding buildings, and would secure the necessary unobstructed access to air and light.

In developing the service departments, these should be placed upon the lower floors, and as many stories as may be necessary to accommodate the desired number of patients should be set apart in the upper part of the hospital. In New York City, at least one hospital has been built on these general principles. The building of the lying-in hospital at Second avenue and Seventeenth street presents many of these features in a well-developed state. No patients are accommodated below the fourth story in a building which is seven stories high. In the lower four stories a nurses' home and all the necessary departments for administration and service, including the dormitories for a large body of students and the teaching rooms for a school of obstetrics, have been

placed. There is also an out-patient department, and the regular rooms for the resident staff are included. This hospital was designed in 1898, and consists partly of superimposed pavilions and partly of the questionable corridor type, and yet, by means of isolated towers for perpendicular elevator and stair communication and of outdoor corridors for separation of the different parts in horizontal intercommunication, the necessary hygienic decentralization required of a healthy hospital has been accomplished, and at the same time the administrative centralization for the economic conduct of the service has been developed and secured.

The principal things which will determine the course of action when a new hospital is to be erected must be, first, the type of construction, which will depend on the cost of land. If land is cheap, the pavilion plan may be selected; if land is expensive, the sky-scraper superimposed pavilion plan should be determined upon. In deciding the question, it must always be remembered that it is frequently easier to secure money for initial cost than it is to secure endowment to maintain a hospital which has been built perhaps more cheaply than otherwise was necessary, but upon a plan which demands an excessive per capita per day expenditure. The running expenses and the annual budget of the hospital are the factors which determine its future success and usefulness. The high, steel skeleton American building fulfills more nearly than any other the economic demands of hospital administration, and it is believed that it can be built in such a way that it will sacrifice in no way the hygienic conditions necessary for the conduct of successful medicine and surgery.

PROPOSED INSPECTION AND STANDARDIZATION OF HOSPITALS.[1]

Shall the Work Be Done and Why?—Who Shall Do It?—What Shall Be Its Scope?—On What Basis?—Large and Small, Special and General, Or Each Class Compared?

By JOHN ALLAN HORNSBY, M. D.
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THE growth of the hospital has always gone parallel with the development of medical science. In the day when the doctor's diagnosis was made at the bedside without the aid of any other person and without the aid of outside forces of which he was not the arbiter, and when his treatment of the patient was corked up in a bottle of medicine, the only persons sent to the hospital were those who had no homes in which to be cared for, nursed, and fed—that is, the very poorest of the poor.

With the development of clinical pathology under Virchow, Billroth, and their contemporaries, there came new aids to diagnosis, aids which demanded the cooperation of a new class of medical scientists, whose work was of necessity done at some central point and not at the home of the patient.

Then came the age of Lister and a tremendous broadening of the field of surgery. Men were cured of diseases that had been hopeless before, but the facilities of the hospital and the assistance of trained people were necessary for the employment of antisepsis on the operating table; a new class of patients was in this wise introduced to the hospital wards.

And then came bacteriology and on its heels asepsis. If there was an impetus to operative medicine under the Listerian impulse, revolution followed asepsis, because abdominal surgery was born. Other classes had need of the hospital, but this was only the beginning.

The pathologist began to make pictures of the blood and to identify certain of these pictures as belonging to certain symptoms and certain diseases, and so his services were needed as an aid to diagnosis. And the secretions came in for like discoveries—the urine, sputum, stomach and bowel contents—and the pathologist was the daily, hourly coworker with the clinician, and his workshop was the hospital. The x-ray had already come with its costly, cumbersome machinery, and that, too, was in the hospital. And so it came to pass that all mankind needed the hospital.

These few high lights of hospital development are cited merely in proof that the hospital has not grown to its present high estate as an independent factor in step with an inevitable social progress, but rather was swept along by the imperious demands of scientific medicine.

But the progress of medicine has been that of a magnificently organized force. The completed task of each worker has been added to the common store. But, as a recent writer has aptly said, "until now, whatever of system has developed in hospital growth has been due to indi-

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vidual hospital preeminence," and not as a part of a uniform, homogeneous plan. The time would seem to be at hand, therefore, when the hospital should think about organization, standardization, classification—system.

The first law of high achievement is comparison, and we must have the comparative factor if we are to attain the superlative. All nature is based on comparisons; the green fields would pall but for the blue hills far away, the silver waters of the brook, threading their way through, and the lights and shadows everywhere. The Great Painter has coated the birds and the beasts in those colors best adapted to secure their hiding places. Nations recognize the contrasts of color, and add protection to their armies by clothing them in the olive greens, the khakis, and the grays, so the enemy will not have the shining mark that so delights the Destroyer. Navies are sent to battle in protective gray, so the enemy may not mark so well. The racer has his running mate to standardize the pace; schools adopt percentages, so there will be the stimulus of the high marks. The soldier is brave when compared with his fellows; the giraffe is a dwarf among the trees and the elephant a pygmy in the hills.

So all things are measured by comparisons, and, if the hospital is to progress, it too must have high marks of achievement in the things that make for perfection in architecture, in equipment, in administration.

But the standard that would help a weak hospital to a higher place is one thing, and the standard that would destroy one that had not already achieved that higher level is quite another; and it goes without saying that any standardization proposed must be constructive and not destructive. But if there are to be standards set, there come up some new questions:

Who is to set the standards?

How shall standards be arrived at?

What shall be their scope?

Let us debate very briefly the first of these problems. All laws are made on the assumption that men cannot judge best for themselves as to their duty to society, and so a tribunal is selected to standardize the conduct of the individual, and usually the standard set is not the highest possible of attainment, but such as can be met by the average person. Laws are not made so that the few can obey them, but for the many; but at least those laws are standards of social conduct. Those who can do better than the laws provide are the leaders, and set the high-water marks for the emulation of their fellows. And so it must be if hospital standards are to be worth while.

The hospital administrator—that is, the hospital personified—is too close to the problem, too much of an interested party, to see clearly the direction progress must take. We are dreamers all, and in the final analysis each of us has his fad and his hobby born of enthusiasm, and properly so born, but that very enthusiasm makes us poor judges of the conduct of others in like occupation.

The physician is incapable of judging of hospital standards and hospital efficiency for the same reason. He has his specialty, and that specialty needs certain facilities in a hospital, and he is likely to be blinded to the needs of others. Moreover, many physicians own hospitals, and so it would come about that, if the medical profession were asked to standardize hospital efficiency, they would be in effect standardizing themselves.

Then, who shall do the work? Some years ago this same problem came up in regard to the standardization of medical schools, and for a long time the medical profession tried to standardize its own schools, and made a lamentable failure of it—nothing was done, no standards were set that could be approved by enough of the profession to have any influence on the schools of the land. But eventually one of the great foundations was persuaded to undertake this work for the reasons given. It was not an interested party, but was interested only in the good of the whole people. It had money available to make the necessary investigations to arrive at standards, and the result was that four or five years ago the Carnegie Foundation published a report standardizing the medical schools of this country which, while creating a vast furore and disapproved in many places because it had found fault with prevailing custom, stands today as the law of the medical schools, and already there has been an improvement of more than 100 percent, partly by the elimination of schools that could not be standardized and partly by improvement in the schools that had a right to exist.

Then, it may be frankly asked, is a standardization of the hospitals intended to eliminate certain hospitals? Perhaps so, but only those that ought to be eliminated, those that are created and conducted for private gain; many of them quasi-criminal in character, maintained to exploit people and especially to exploit that class of people least able to protect themselves—the sick, the poor, and the unfortunate. A standardization that has any other purpose in view would not be approved and will not be carried out; but not a single hospital created and maintained for the sick and intended to be supported by the public, either as a private institution organized under the no-profit laws, or a public hospital, can possi-

bly be embarrassed or hurt by such standardization and, on the other hand, will be greatly aided.

How shall standards be arrived at? Hospital efficiency is a personal service and contemplates the carrying out of the doctor's orders for the benefit of his patient. This is not theory—this is practical hospital administration in its last analysis. One cannot sit in an office and make standards for hospitals. One must get out and see what the hospitals are doing and how their service is meeting the demands of the physician for the benefit of his patient under the laws of modern medicine.

The doctor today requires help to make his diagnosis, and for this purpose there must be a laboratory of pathology. It need not be elaborate or expensive, but it must be scientifically correct, and reports from that laboratory must be reliable. And to perform this work there must be trained people; for the small hospital not many, but at least one, and not all his time perhaps may be required and he may serve one or several hospitals, but his service must be exact and scientific. In this day, when even pathology is specialized and where the pathologist may not be specially trained in bacteriology, there must be facilities in the hospital to perform every variety of what is known as hospital pathology. There must be someone who can give to the doctor his diagnosis of tissue taken in the operating room; there must be someone who can distinguish the various micro-organisms, make cultures of them and vaccines; there must be someone versed in the laws of serum therapy and who will be able to direct the administration of the serums in proper cases. There must be someone capable of making secretion analyses, or there must be some place near by where each hospital can have available these various aids to the physician.

The x-ray is no longer in an experimental stage, and it is needed not only for diagnosis of long bone injuries, but by its aid the doctor can now make diagnosis of bone lesions in diseases of the joints. And not only that—we are now invading the cavities of the body and are determining diseased soft parts, and calculi of the various organs can be located. Not only in diagnosis is the x-ray valuable, but recent discoveries have shown its value in the treatment of many diseases, and it is necessary that the modern hospital shall be able to do this work or shall have facilities near by for having it done.

The scientific feeding of the sick has in a very large measure taken the place of drugs in the treatment of disease, and it is necessary that the hospital shall be able to carry out the doctor's prescription in the matter of diet. Someone in the institution who has charge of the special diet department should know the chemistry of foods, the physiology of the digestion, and should know how to apply these sciences to aid the doctor in his work on metabolism.

The success of surgery today depends less on the skill and experience of the surgeon than on the asepsis of the operating theater, and this asepsis must be guaranteed in even the smallest hospital.

The nursing of the sick is a scientific part of hospital administration, and there are certain demands of the medical profession today in the practice of nursing that must be met—cleanliness, accuracy, kindness, sympathy; all these go to make scientific nursing.

These are a few of the directions that standardization must take. There seems to be only one way to determine these standards, and that is by personal investigation of each institution and at the end of such an investigation summaries can be arrived at, determinations can be made, marks can be set.

It has been suggested in some quarters that hospital standards need contemplate the value of the hospital only as an adjunct to the medical school. This, of course, is preposterous. The time has gone by when the hospital is an adjunct to the medical school, and the reverse is true. The hospital is reared, supported, and administered for the care of the sick. The care of the sick is the hospital's first law, and the second law is the education of those who must come after to cure disease; and therein lies the value of the hospital to the school, and therein lies the helpfulness of the hospital to the school, but first and foremost, if the hospital is to be standardized, it must be standardized as a place in which to take competent care of sick people, and it must not be standardized on a basis of what it can do for the medical school.

Those of us who think all the knowledge of all the ages has been concentrated in the building and equipment of the modern hospital will be disillusioned to know that Tonerre Hospital, in Burgundy, built in 1293 A. D., enjoyed some advantages that the hospitals of this country today might envy. It was situated between the branches of a small river, to afford good drainage; its one great ward, 260 by 60 feet, was lighted by many large windows extending high up toward the lofty ceiling, for ventilation and light; a narrow gallery ran along the wall 12 feet above the floor, for the regulation of ventilation, and this gallery was used for sun baths for convalescents. The beds were separated by low wooden partitions, which were portable, making the ward into one large room at will, so that during mass the altar might be seen from every bed. The area per patient was four or five times that allowed today.

OUT-PATIENT WORKSHOPS—A NEW HOSPITAL DEPARTMENT.

Proposals That Hospitals May Provide Work for the Handicapped—Families May Remain Intact—Careful Selection of Work Required.

By HERBERT J. HALL, M. D., Marblehead, Mass.

WITHIN a few weeks there will be ready at the Massachusetts General Hospital a workshop for the manufacture of flower-pots. The shop will be small, but well equipped with automatic molds, so that people of very little strength may turn out pots and flower-boxes of such design and coloring as should command a ready market at a fair price. The molds have been so constructed as to insure success from the mechanical and artistic points of view. Nothing will be left to the choice and initiative of the workers, who will be chosen from among the chronic out-patients of the hospital—people who would otherwise be idle at home or working at some hard, unsuitable employment. This is, so far as I know, the first attempt of a general hospital to provide work than can be regulated to the capacity of its crippled out-patients, with the idea of protecting these people from the evil effects of idleness or overwork.

No one will doubt, I think, the advantage of quiet, controlled, and fairly remunerative work for the patients whom the hospital has discharged relieved, but who are still liable to breakdown under unfavorable conditions.

The fact is that this important element of adequate work for partly disabled patients has never been fully met by any outside charitable agency, so it is proposed that the hospital undertake to safeguard its patients and to protect itself and the public in this new way. The ability of the hospital to provide specialized and remunerative work will, no doubt, be questioned. I shall try to show the possibility of a new industrial system, which shall be presided over by the hospitals, and which shall justify itself in every possible way.

Dr. Hornsby says in his report to the Board of Commissioners of Cook County: "Public institutions to take care of the sick are not wholly monuments to the benevolence of the people—they are defensive institutions for the benefit and protection of society;" and later in the same report: "Heretofore it has been and is now the custom in eleemosynary institutions all over the world to pick up the fallen, keep him until he can stand on his feet, and then turn him adrift. Tomorrow he falls again, and we repeat our benevolence of yesterday, and so we make no advance; and vast numbers of our poor and helpless, who could be restored to their families and to self-support, are permitted to drift into a state where they become public charges. The records of our county institutions will show vast numbers of returned cases; cases that come back with the same ailments that brought them in the first place, and up to this time we have been satisfied to regard this situation with placidity." He continues his arraignment by saying: "The time has come now to take a broader, better, more businesslike view of our obligations to the poor, the needy, and the helpless, if for no other reason than good business judgment." These are strong words, and they mean that a great tide is turning toward better and more practical charities.

If the hospital is to undertake to improve conditions in the life of the patient after his discharge, it may well begin by providing adequate work. Work with a money return will be the substantial basis of all such improvement. Without that basis, except in cases of absolute helplessness, our charity may be frightfully wasted. The social service workers have in the past few years accomplished a great deal in the right direction. The Social Service Committee of King's Chapel in Boston has in Miss Harpor a woman who knows the trades and who is remarkably successful in finding work for handicapped people. But the doors of the industries are, for the most part, closed to the handicapped. Business is geared too high to give more than an occasional, subordinate place to men who are not able-bodied.

In Chicago it is proposed that the County Hospital shall control a great farm at Oak Forest, where the discharged patients shall go and where they shall remain as long as necessary under medical observation, and where they can do prescribed work for their own individual support and for the common good. Perhaps this will be the usual and best way of dealing with the problem. I think, however, that we shall find great numbers of patients who will not do well on a farm, and who must have work of another sort if they are to be controlled. Many of the people who break down and come to the hospital would be quite out of their element in the country. They are shop workers from first to last, and they would be poor assistants on the farm, although they might theo-

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retically be better off there. Further than this, the separation of families is undesirable if it can be avoided. A great many patients unable to work in the regular industries could still live at home and work by the day in specialized shops if such shops were conveniently located at the hospitals. The burden of providing work would be a much lighter one if a good proportion of the patients could have the personal care and partial support of their families.

It is easy to believe that the whole idea of specialized work is impractical. If the established factories and workshops of the world must employ only the most efficient, how can charitable institutions without experience and with crippled workers hope to accomplish adequate results? I believe that the hospital workshop—this first one in Boston and many others that may follow the example—will show the possibilities of an industrial system of tremendous economic and social importance. Not many years ago the great manufacturing plants were throwing away biproducts that are now worth their annual millions. The industrial world is today throwing away damaged human material, the reasonable salvage and exploitation of which would change the economic outlook of the world, and that would save an amount of human suffering too great to be reckoned.

An experience of ten years in the study of occupation for handicapped people of a very different class has made me sure that this great thing can be done. The first requirement is this: that the new handicapped industries must not attempt to compete with machinery, that they must not cross the established lines. The second requirement is an assured market for all products; this implies that the choice of products shall be wise and far-seeing, and that the workmanship must be good. The third requirement is that the work must be of a kind adaptable to physical and nervous limitations. In the light of these three requirements, let us examine the flower-pot industry which is now being pursued in a small way at the Industrial Home for Convalescents at Sharon, Conn., and in my own experimental shops at Marblehead. If we were to attempt to make flower-pots out of clay as they have been made for generations; if our shop force of handicapped people were to compete with the jigger-wheels and the enormous kilns of the great potteries, we should not only fail, but we would amply deserve our failure. But we propose to make flower-pots in a new way—out of cement this time, and cast in molds that can be handled by a crippled girl quite as well as by a strong man. If our molds are proportioned and designed by an artist of full ability, then the situation changes. The strong men may bend to their wheels, turning out cheap and rather ugly flower-pots that sell, to be sure, by the hundred thousand. This great industry goes its way, and it will not interfere in the slightest degree with the smaller, slower, but equally well justified, process.

When I say well justified, I mean that this new product gives to the public at a moderate price—more expensive than terra-cotta, less expensive than glazed pottery—a beautiful and useful article of common use. The material for these cement flower-pots costs from three to ten cents; the selling price is usually from fifty cents to one dollar. Thus is the second requirement fulfilled, or as nearly fulfilled as can be the case with any new idea. We are counting on the well-known market for flower-pots, and on the especial characteristics and middle-priced value of our wares.

The third requirement is more easily met than most of the uninitiated would suppose possible. Here is the keynote of success for all handicapped labor. There must always be a fully trained instructor and a sufficient number of able assistants. Handicapped workers alone are hopeless and helpless; under careful direction there is no end to their possibilities. It is necessary to insist upon fractional effort. Sustained effort, without periods of rest, will end in failure for most handicapped workers. With periods of alternating work and rest, a very feeble person may accomplish, without harm, a surprising amount of work. The molds for cement flower-pots of any shape, and for all except the larger sizes, can be handled by a person with one hand or with very defective sight, or by one who, because of a cardiac dyspnea, must work very carefully and slowly.

Cement working is but one of many possible modifications of existing industries. In the shops at Marblehead we have developed hand-weaving to a high degree of perfection. By our three requirements, hand-weaving is available for convalescent or permanently limited people. We would be absolutely lost if we were to attempt to make cloth such as could be more readily made on the power looms. But by developing especial patterns and individual effects designed by clever craftsmen, we provide a business capable of supporting a great many handicapped workers. At Marblehead we make a small woolen blanket for babies. The material costs about 60 cents. If we were to weave a similar length and width of plain wool, we could not sell it for a dollar; but because there is an attractive design and because the ends are finished well, these specialized blankets sell for $6. It takes about a day and a half to make one of these blankets. The factories could not take the time

and trouble to produce such things, but the hospital workshops could take the time and it would mean partial self-support where such help is greatly needed.

The making of artistic pottery is a field in which handicapped labor may some day be employed. It means, however, an expensive plant and a number of expert people. My own experience in this line has been hardly less interesting because my patients have been few and of the educated class. Eight years ago we began to make pottery, thinking that it might become a good feature in the specialized industrial plan. The work did not turn out well at first because pottery making is a fine art, and takes time and skill for development. We worked, of course, on a very small experimental scale, but we soon found we could not take in invalids and convalescents as helpers and apprentices because they spoiled the product. Finally the personnel narrowed itself down to four people—two workers who were pretty seriously handicapped, and two who were professional potters. These people worked out the problem at last. The handicapped workers are now practically well and are earning a living. We have added one able-bodied worker, and these five people make a successful unit. They made and sold last year $6,000 worth of pottery, a ware so fine that it ranks among the best in the country. Later I shall hope to bring into this pottery business a number of handicapped workers who will attend to various necessary details. The little plant is at present quite self-supporting.

In our shops we have tried out metal working of the finer sorts, basketry, leather and wood carving. These crafts I have for the present discarded because we cannot make them pay. An immense amount of combined medical and industrial observation will be needed before the idea of handicapped industries can be carried out in a really adequate and comprehensive way. My own personal work has gone just far enough to make me sure we are on the right track. It has been carried out, for the most part, among people of education and means, who are willing to take the work cure because they realize that it is the short cut back to efficiency in neurasthenia and allied conditions.

It is, of course, quite possible that the plan of the hospital workshops may not succeed in its early forms, but I hope you will watch with interest the little cement industry in Boston and at Sharon.

I believe the need is great enough and the early prospects good enough to warrant extensive experimental workshops, where various trades may be tried out mechanically and studied clinically. Such a study, to be adequate, would require endowment or public support. Such support would seem well justified, for, if we stop to think, we shall realize that idleness means heavy tax upon the public charities and much, very much, more. From the point of view of public morals, as well as from pressing economic reasons, the thing is justified.

Workshops may be established extensively in connection with hospitals and asylums in and out of the cities. They may sometimes be maintained by several institutions jointly; they may be run in connection with such farms as that proposed in Chicago; they may help out materially in unexpected ways, as in the problem of the tuberculous convalescent. Until the larger development comes we are doing the best we can without endowment at Marblehead. These workshops are now prepared to take young men and women as pupils, and to fit them, as far as possible, to direct and teach in hospitals or elsewhere. We can furnish molds and other apparatus for cement working, and looms and materials for hand-weaving.

A social worker who knows whereof she speaks, has said: "Not drink, not gambling, not any of the three hundred evils to which the human race is heir, but the workless man. He is the vital problem, for he is prey to all the other evils."

There is nothing new in the idea of occupation for invalids. The work of patients has been successfully used in many institutions, such as those for the blind and the crippled. The exploitation of handicapped labor has even been looked upon with suspicion, perhaps not always unjustified. Sometimes in homes and asylums the patients or inmates may have been employed to their own disadvantage and for the benefit of the institution.

Carefully premeditated and concerted action is needed in order that such possible injustice may cease, and that a beneficent system may have its largest and finest application.

I wish that the idea might be taken up by the smaller as well as by the larger hospitals, and that you may at least see your way as an association to the investigation of a matter which I know you will agree concerns to some extent the final efficiency of our hospital service.

A new hospital for women, with only women on its staff, has been opened in London. The example of Mrs. Garrett Anderson, the physician who started the first English women's hospital, has been followed by a group of women who are back of the South London Hospital for Women. How great the need of such an institution is is shown by the fact that only two weeks after it opened its doors there was a waiting list of 180. An incidental benefit of these two hospitals is that they afford woman physicians an opportunity to get clinical training. All the other institutions are closed to female interns.

POETRY AND PROSE IN THE HOSPITAL.

Romance and Facts Connected with the New City Hospital, Louisville, Ky.

By J. W. FOWLER, A. M., M. D., Ph. D.
SUPERINTENDENT.

BACK in pioneer days, some time after the world-renowned Indian fighter, Daniel Boone, made his way from his home in North Carolina across the Blue Ridge Mountains through the Cumberland Gap to the paradise of the Indian hunter, abounding in wild deer, buffalo, and bear, known as the Dark and Bloody Ground, there came to the falls of the Ohio river a pioneer expedition at the head of which was the brilliant soldier and surveyor, George Rogers Clark. The eyes of man never beheld a more entrancing panorama of nature than lay before his vision—a mighty river a mile in width, with a number of forest-clad islands arising from her silvery bosom, as fair and beautiful as the emerald gems that grace the tapering fingers of my lady fair. The circling knobs rose to almost inaccessible heights along the Indiana shore, and a valley of surpassing beauty, kissed by the sparkling water of the Ohio, lay upon the Kentucky side.

"There is not in the wide world a valley so sweet
As the vale in whose bosom the bright waters meet."

Here the bright waters of the majestic Ohio meet and struggle, and with a stupendous onrush fall over a descending plane of gigantic rocks a depth of 45 feet with a force that lashes its waters into a thousand swirling eddies and sends the white spray high in air, rendering the scene about the falls one of gorgeous beauty. The intonation of the falls is heard for many miles around on soft moonlight nights, such as are only found in old Kentucky, for

"The moonlight falls the softest in Kentucky;
The summer days come oftest in Kentucky;
Mountains tower proudest,
Thunder peals the loudest,
The landscape is the grandest—
And politics the damdest
In Kentucky."

It is written by a great geologist and antiquarian that the geological formation about the falls of the Ohio and the prehistoric mounds that are found here establish the fact that this is the spot where man made his first appearance on the earth, and, therefore, this is the cradle of the human race.

Be that as it may, George Rogers Clark founded the city of Louisville on one of the emerald islands mentioned, and in doing so builded wiser than he knew, for Louisville has grown to be a city of 300,000, and is known as the gateway to the sunny South, and her warm-hearted people welcome the world to the land of sunshine and flowers.

In 1813 the old City Hospital was chartered. It was built and stood for a century with outstretched arms as a home to the sick and wounded of all nations. Listen, ye modern Knights Hospitalia, to the wisdom of those pioneers in their definition of the uses of a hospital:

"Owing to the fact that the charity of private individuals is unable to provide for the many sick from exposure to long voyages and other causes, it would be wise and humane to erect a hospital at the falls of the Ohio for the safety, comfort, sustenance, and restoration of the wounded and afflicted."

After the old hospital had stood for sixty years amidst her forest trees, still beautiful in her old age, an effort was made to build a new one, which failed. Each succeeding mayor for forty years (take courage, ye who are waiting and hoping) tried to build one. It was the "outs," mistrusting the "ins," who always voted "no." But in 1911, by a concerted action of both "ins" and "outs," led by our distinguished Mayor W. O. Head, we succeeded in getting, by vote of the people, $1,000,000 with which to build a modern hospital.

A bipartisan hospital commission was appointed, consisting of four of our best citizens—Colonel John H. Leathers, banker and ex-Confederate soldier; Mr. Joseph Hubbuch, a most popular German citizen, Democrats; Dr. Ap. Morgan Vance, the great surgeon of the Ohio Valley; and the learned and beloved Judge Arthur Peter, Republicans. They in turn selected the best-known hospital architects in the South, D. X. Murphy & Bro., and secured the services of the accomplished engineer and superintendent of St. Luke's Hospital, Chicago, as consulting architect. The commission made a journey over the country looking for the best features of hospital construction, and finally decided to erect a group of eleven buildings, consisting of three stories and a basement, combining the cottage and pavilion systems.

Then came the order for me to move out, as they wanted to build the new hospital on the old site, and for the first time in the history of the world a big general hospital had to move, carrying patients, nurses, physicians, employees, babies, furniture, and cooking stoves with us. This was one of the newspaper headlines the day before

we moved, "An Undertaking Surpassing Any on Record—Moving 300 Patients a Mile Distant, Carrying Everything With Them." This headline appeared the day after we moved, "Gigantic Task of Transplanting Sick of City Completed With Few Mishaps."

Last April the Board of Safety suggested that I visit the hospitals of the country and study their management. I demurred, as I thought I had enough experience and data at hand. I was instructed by the mayor to go, and my first trip was to Chicago. After visiting Michael Reese, St. Luke's, Wesley, Mercy, and Cook County, this is my report:

"Board of Safety—Mr. E. T. Tierney, Chairman.

"Gentlemen: If a city best exemplifies its culture, its sanitary advancement, and its humanitarianism by the number and character of its hospitals, then the 'Windy' certainly stands to the fore, and redeems its reputation of being the fastest and wickedest city in America, for charity truly covers a multitude of sins.

"I thought I knew from reading and experience something of hospitals and hospital work, but my imagination never painted the things I have witnessed here, and my mind is bewildered in its attempt to correlate and classify for your benefit what I have learned. I said to Mr. Tierney, when he informed me that the mayor wanted me to visit the larger cities with a view of learning the best way to manage our new hospital, that I did not think it necessary, as I had all the data I wanted to place it on an equality with the best. I now, and here, apologize, for I see the wisdom of his proposition. My circumscribed hospital experiences were too limited for me to comprehend what splendid advances have been made in the hospital service of the great city of Chicago. I now realize that the mayor's advice to visit the large cities is the thing to do."

Since then I have visited all of the larger hospitals of America in quest of knowledge, and have traveled from ocean to ocean and from Hudson Bay to the Mexican gulf.

I do not know of any other superintendent in the country who has had this privilege, and I want to say that I was hospitably received and always granted the opportunity of getting such information as I wanted, and, in addition was shown a world of courtesies, for which I am very grateful. If my capacity was as great as my opportunity to learn, I would be the best informed superintendent in the United States, and there would be no necessity to establish a hospital bureau at Washington, for when a superintendent wanted to know anything, all he would have to do would be to communicate with me.

On the last lap of my journey over the United States I stepped within the classic corridors of the Boston City, Massachusetts General, and the Peter Bent Brigham, of Boston; the Mount Sinai, Gouverneur, Rockefeller, and Bellevue, New York; the Jefferson, City Contagious, and the City Hospital, Philadelphia; the Johns Hopkins and City Hospital, Baltimore; the Georgetown University Hospital, City Emergency, Washington; the City Hospital at Pittsburgh and the City Hospital at Cincinnati. In a future article I will give the readers of THE MODERN HOSPITAL my impressions in detail of these hospitals, and some of the characteristics of their distinguished superintendents.

I am back in Old Kentucky, and I find our dream has come true—our new hospital is completed and nearly ready for occupancy. It is as beautiful as the petals of a marechalneil rosebud.

I have seen larger hospitals in my journey, one costing $1,500,000, have seen more imposing ones, architecturally—hospitals with better environment as regards space, trees, and altitude—but none of them are just quite as classy as this marvel of beauty, whose inmates will be lulled to sleep each night by the music of the rippling waters of the falls of the Ohio.

"The dove-notes are the saddest
In Kentucky;
The streams dance on the gladdest
In Kentucky;
Hip pockets are the thickest,
Pistol hands the slickest,
The cylinder turns quickest
In Kentucky."

The Board of Trustees.

"The only object of a hospital is to cure the sick. Every penny spent on any other is matter for regret. Unfortunately, management cannot be done without; but so long as the funds of the hospital are properly spent and the patients are treated with skill and kindness, the less the cost of management the better," says *The Hospital* (London). "Theoretically, if the right man could be found, management by one man would be the best; but human nature being what it is, imperfect so far as one man is concerned and distrusted so far as the subscribing public is concerned, a committee of some sort is necessary. Certainly it is better that this committee should be composed of men or women interested in their work; but it does not follow that the larger the committee, even of interested people, the better do they manage the hospital. Committees of management, in short, are not training grounds; they are or ought to be composed of men who have a knowledge of their work. It is, of course, sometimes unfortunately necessary to conciliate some important local interest by offering a seat on the committee to this or that individual. Luckily, too, it also often happens that this individual turns out an excellent committeeman, but unless the majority of the committee are sound business men, the hospital suffers. A hospital committee of the average kind is composed of twenty or thirty of the local business men of position, strengthened, as some think, by members of the honorary staff. A committee of this sort may become sleepy and old-fashioned unless it has an energetic chairman to keep it alive, but on the whole it makes no gross errors of management; it is not guilty of fussy interference, and it knows the necessity of discipline."

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The Sanatorium's Purpose and Setting.

The sanatorium is constantly looming larger in the eyes of the medical public. Within the past fifteen years the popularity of certain sanatoria and the activities of sanatorium promoters have increased enormously throughout this country as in Europe. That is a fact of deep significance. The *fact* is apparent to every observer; the *significance* is seldom grasped. And yet the significance is fundamental, and as far flung as medicine and as pathology. The sanatorium is but a special type of hospital. To the hospital the sick of all classes are thronging, because they understand that in the hospital they can find the best care as yet provided; *as yet*, because the conventional hospital is not now doing its full duty. It cares for the immediately and acutely ill, but it disregards their convalescence and their ultimate recovery. Always this disregard has been a fact, save for a few hospitals for chronic disease and the homes for incurables. The afflicted public long ago grasped this fact; they felt neglected. Chronic invalids and convalescents are always with us. Long ago they found themselves thrust forth from the hospital doors. They suffered, and the sanatorium was devised to meet their needs. The public was proportionately grateful. Sanatoria grew in popularity. Large numbers of the public loved and trusted them. Sanatoria became veritable *almae matres* to the forlorn, while unscrupulous men stood ready to reap their profit from those confiding ones. Unqualified promoters waved their flags and shouted their wares. They celebrated the virtues of baths and springs, of mountain tops and forests, of mud and medicine, of fabulous frictions, and of dingy dietaries. Underneath it all, however, there grew up genuine service, founded in a fashion on appreciation of genuine needs. Smiling hotel clerks and obsequious doctors learned something of the customs of the sick, and gradually a more skilled service and men of genuine training turned themselves to the new sanatorium field. Still, sanatoria mostly remained commercial properties, conducted by commercial men, and such conductors caught the spirit of other popular resort promoters—the spirit which aims to catch the immediate fancy of patrons, to retain them and to encourage their return. Meantime these patrons have seen conditions change with the lapse of years. Health resorts—bogus sanatoria—which have little relation to scientific medicine, have multiplied; hot springs and seaside hotels, mountain retreats, and forest camps now solicit invalids; they abound throughout the land, and with their natural attractions they compete seriously with the genuine sanatoria. And, then, there is the automobile. We are in a period of transition, and we are properly concerned with the genuine sanatoria only.

All these conditions so complicate the once smiling sanatorium situation that they have forced upon the sanatoria a problem which seems susceptible of but two solutions: either the sanatoria must become popular-resort hotels themselves, or they must revert to their original purpose—the healing and care of the sick. To attain this, they must adopt many or all of the features of modern hospitals—these in addition to their proper rest cure, diversion, and sanatorium features. They must seriously and faithfully cling to scientific medicine in the general study and treatment of patients, but they must continue the personal solicitous interest in the individual patient—that interest which has always characterized and humanized sanatorium life. Sanatoria must never fall into the attitude of error common to busy hospitals—the attitude which views patients in groups, which cultivates the impersonal, which interposes a barrier of formality, nurses, interns, and routine between the patient and his physician.

We shall discuss later the nature of a sanatorium clinic and methods of bringing scientific medicine to its aid. Such methods lie at the root of sanatorium efficiency, if sanatoria are to en-

dure. Suffice it here to remind our readers that many of the old and attractive sanatorium features must still be maintained and perpetuated. They are an invaluable asset: the country; an agreeable climate; charm, beauty, and grace in surroundings; sightly, comfortable, and commodious buildings; a plain, but good and substantial, cuisine; courteous and well-trained attendants; cheerful rest rooms; indoor relaxations and amusements; outdoor recreations. Such is the setting. The scale may be great or small, but our sanatorium must impress the patient with a sense of efficiency and perfection. The psychical significance of all this is never to be forgotten. Shoutings and advertisings and clap-trap count for nothing in the end. The plant should be inspected occasionally by a competent architect. All this is the frame of the picture, and the gilding of the frame must not tarnish. But never confound the frame with the picture; and the picture—the actual sanatorium—we shall discuss in further writings.

JAMES G. MUMFORD.

Low-Cost vs. High-Cost Hospitals—A Reply to Dr. Ochsner.

In the September number of THE MODERN HOSPITAL Dr. A. J. Ochsner, of Chicago, who is widely known as a surgeon and as the author of "The Organization, Construction, and Management of Hospitals," ventures anew into the field of hospital economics. "In the aggregate," says Dr. Ochsner, "enormous sums are expended for hospital maintenance. It is of greater relative importance to avoid wasteful expenditures for maintenance than to prevent extravagant outlays for construction, because the expense of maintenance never ceases. As an illustration we need but to take two of the best known hospitals in this country. In one of these the actual cost of maintenance is slightly less than $1 per day, while in the other it is $3.30 per day. The difference in a year would be $839.50. Apply this difference to each one of the one million hospital beds which are required in this country, and you would have wasted the stupendous sum of $839,500,000 per year."

There are those who will assume that there are differences between the hospital whose "actual cost of maintenance is slightly less than $1 per day" and the hospital whose per capita is $3.30. Dr. Ochsner is prepared for this assumption, which he says will be made "by those who have not studied this phase of hospital development." He asks whether it is "unreasonable to consider both of these institutions equal in their efficiency so far as the care of the patient is concerned." The answer follows: "As a matter of personal observation, I can state that both institutions are perfectly sanitary and clean; in both the patients receive most excellent food and the best of care; but in one institution no unnecessary things are purchased, and of the supplies that are purchased almost none are wasted. In the other institution *a principle which has worked itself into the daily life of almost every member of the medical profession is the real cause of the high cost of maintenance. Every medical man has the feeling that when the life, health, or care in sickness of a patient is concerned, all other things, especially the cost of things, are of little or no import, and as a result of this principle millions and billions of dollars are being expended in hospitals without reference to what this expenditure will do toward real efficiency.*"

Dr. Ochsner generalizes from his personal observation of conditions in "two of the best hospitals in the country." Perhaps he will give us the names of these hospitals. If he will show us how, at an expenditure of less than $1 per day, we can obtain commodities for which hospitals ordinarily expend $3.30, the hospitals of the country will owe him a debt of gratitude, and the nation, according to his own calculation, will save "millions and billions of dollars."

While waiting for Dr. Ochsner to furnish the names of the institutions by the study of whose methods we are to learn the much-needed lesson of economy, what may be predicated in general of low-cost as compared with high-cost hospitals?

The hospital which is conducted at less than $1 per day, says Dr. Ochsner, is perfectly sanitary and clean. Clean it may be, but of a certainty its sanitary standards and its standards of personal care of patients cannot be as high as those which ordinarily prevail in hospitals which spend three times as much. Its space allowances in wards and dormitories will be found to be less than those of most high-cost hospitals. There will be found in the cheaper hospital fewer separation rooms, recovery wards, and day rooms; less spacious balconies; a dearth of receiving, detention, and isolation wards. The utility rooms and ward kitchens will be observed to be smaller and less perfectly equipped. Have these details any relation to hospital sanitation or not? Besides, in a hospital which is conducted at a cost of $1 per day or less the nurses and the help are not comfortably housed, or perhaps a large proportion of the employees live outside of the hospital altogether. These things, I say, may be predicated in general of hospitals which are maintained at a cost of less than $1 per capita per day. Excep-

tions there may possibly be, but the rule holds; and the list of relative defects and disabilities may be considerably lengthened.

When a hospital is conducted at a cost of less than $1 per day, it is commonly the case that much of the work about the wards is done by unpaid helpers of a shiftless and untrained kind; the work of the hospital may even be intrusted in part to convalescent patients, whose prolonged retention in the hospital serves to mislead the reader of hospital reports by adding inexpensive "hospital days" to the institution's statistics of treatment, and whose domestic activities have the further effect of keeping down expenditures for wages. Where conditions of this sort exist the hospital may indeed be as clean as the high-cost hospital, but is its usefulness to its patients and the community the same?

To any experienced hospital worker who reads Dr. Ochsner's article many pertinent questions will suggest themselves. For example, Is the service of the low-cost hospital which Dr. Ochsner cites of the same acute character as that of the high-cost hospital? Are as many surgical operations performed proportionately in the one hospital as in the other? Is teaching done in both hospitals? Is the proportion of high-cost, but self-supporting beds—that is to say, beds occupied by private patients—the same in the two institutions? Are the same careful means (laboratory tests, x-ray examinations, etc.) employed for diagnostic purposes in the one hospital as in the other? Do both hospitals participate in the same degree in those scientific researches which can be carried out only in hospitals, and by means of which the interests of all hospital patients, and of the community in general, are so unmistakably promoted? These are matters that must be noted and allowed for in any intelligent and conscientious comparison of hospital costs. I challenge Dr. Ochsner to name any hospital conducting an acute service at a cost of less than $1 per day in which, in the particulars named, the service is of the same character as in any hospital of good repute whose average expenditures are $3.30 per day.

The care of the patient is intimately bound up with the nursing organization of the hospital. "Excellent care" implies nurses sufficient in number and properly trained. In proportion to occupied beds, are there as many nurses in the $1 hospital as in the $3.30 hospital? Are the nurses as well taught in the former as in the latter? Are the supervisors equal in training and competence?

In hospitals devoted to the treatment of acute diseases, and conducted at a cost of $3 per day or more, one finds invariably that the total number of attendants (doctors, nurses, and hospital employees of all grades) is at least equal to the total number of occupied beds. In other words, a hospital of 250 beds has in reality 500 inmates—frequently more, never materially less. In some of the very best and most carefully managed hospitals in this country the ratio of workers to patients is five to four, and the relative number of workers tends to increase from year to year as clinical departments are more highly subdivided, as the patients in given departments or ward units are more thoughtfully classified, as laboratory work increases in importance and variety, as therapeutic and diagnostic equipment is added, and as the regular work of the hospital is supplemented by social service work. Now, one may concede that good management, as compared with poor management, may accomplish equal results with a staff 10 percent or even 20 percent less numerous; it is inconceivable, however, that the number of hospital workers of all classes can be reduced 50 percent, and the care of the patients remain unaffected.

Let us assume that in Dr. Ochsner's high-cost hospital the ratio of workers to patients is 5 to 4, and that in the low-cost hospital it is 1 to 1, or 20 percent less. If in each institution one-third of the total current expenditure, approximately, is devoted to wages, one-third to food, and one-third to all other expenses, including fuel, building maintenance, repairs, and all forms of medical and surgical supplies (these proportions are common ones), there will be available in a hospital conducted at "$1 per day or less" from 30 to 33 cents per day, or from $9 to $10 per month, for wages for all classes of employees. In this average of from $9 to $10 per month there will necessarily be included the salaries of the superintendent of the hospital, the superintendent of nurses, the chief engineer, the chief accountant, paid medical officers, supervising nurses, etc. It goes without saying that the superintendent of the hospital and at least some of the other officials and employees will receive more than $10 per month; and therefore one is sure to find in the $1 hospital a great deal of wretchedly paid or unpaid labor, or a number of employees so much smaller than the number available for service in high-cost hospitals that the standard of care must be materially affected. Perhaps Dr. Ochsner's $1 hospital is a religious institution, where the bulk of the domestic and nursing labor is performed gratuitously. If so, what can possibly justify the comparison of its bookkeeping costs with those of an institution conducted on an entirely different plan; or, if the comparison itself be per-

missible, what justification can there be for charging against the carelessness of the medical staff differences in cost that are explainable on quite other grounds?

In high-cost hospitals expenditures for wages, as a rule, represent a somewhat higher percentage of the total expenses, and those for food a somewhat smaller percentage of the total expenses, than in low-cost hospitals. Let us say that the high-cost hospital cited by Dr. Ochsner, whose total per capita expenditure is $3.30 per day, is in a position to spend for food 90 cents for each day of treatment, or a little less than one-third of its available current funds. There being five workers to feed for each four patients, 90 cents must supply food for two and one-quarter persons. In other words, the food cost per person per day is 40 cents. On analysis it will appear that the sum spent for food for private patients is much greater than this (but, whatever it is, it is, or should be, repaid dollar for dollar by these patients, and therefore should represent no net expenditure on the part of the hospital at all), while the sum spent for ward patients will be found to be considerably less than the average, or, say 25 cents.

How do these figures compare with the cost of food in the $1 hospital, where, according to Dr. Ochsner, the service is just as good as in the high-cost institution with which comparison is made? Of the total available sum of "less than $1 per capita," from 30 to 33 cents will be available for the purchase of raw food. (I assume, of course, that the hospital is one in which wages are paid, and not a hospital where labor is performed gratuitously, because in the latter case, as I have already intimated, the whole comparison would be vitiated.) Now, this 30 to 33 cents must feed one worker as well as one patient; in other words, there is available for food in this institution, per capita, only from 15 to 16½ cents per day. If a comparison of the two hospitals is valid, the classes of patients treated in the two institutions must be approximately alike. Presumably, therefore, the average of 15 to 16½ cents per day includes the cost of food purchased for private patients, for whose food actual expenditure must necessarily be greater than this average sum. Allowing for the higher individual cost of the food served to private patients, resident staff, officers' table, etc., there remains for ward patients and for the common workers of the hospital a sum considerably less than the average of 15 to 16½ cents—say 11 to 12 cents. Does Dr. Ochsner contend that any hospital, however well managed, can feed its patients and servants at 11 to 12 cents per day, and do it as well as it is done where from two to three times this sum is available for the same purpose? In effect this is what Dr. Ochsner really claims. Moreover, he declares that the difference in the cost of service is due wholly to indifference to economic facts on the part of the medical staff.

What part does or can indifference to economic facts on the part of the medical staff play in determining hospital costs? The members of the medical staff, as a rule, have little to do with determining sources of supply of general merchandise, with fixing the number of employees, or with the determination of wages. They are intimately concerned only with expenditures for surgical equipment and supplies, and in high-cost hospitals about 10 percent of the total expenditures are devoted to these purposes. For example, a high-grade hospital, caring for both private and free patients, spent last year the sum of $400,000 for maintenance, the out-patient department excluded. Of this sum the expenditures with which the medical staff were in any way connected were the following:

Apparatus and instruments	$ 4,500
Medical supplies	2,800
Surgical supplies	1,500
Rubber goods	3,500
Drugs	8,600
Druggists' sundries	2,000
Wines and liquors	2,000
Dressings and bandages	11,000
Pathological department	2,500
Röntgen ray department	1,600
Total	$40,000

Now, let us assume (what is not in the least true) that one-half of this sum was wasted; it follows that of a total expenditure of $400,000, 5 percent, or $20,000, was wasted as the result of carelessness on the part of the staff, and 5 percent of $3.30 is 16½ cents. If, however, only one-quarter of the $40,000, with the expenditure of which the medical staff had anything to do, was spent in fruitless ways, then but 2½ percent of the hospital's gross expenditures are chargeable to bad practice on the part of the medical staff; and 2½ percent of $3.30 is only 8¼ cents. Will any well-informed hospital economist contend that even a careless staff is responsible for more waste than this? If so, let him show where and how the drug supply can be cut in two, the routine work of the pathological laboratory materially curtailed, x-ray work suppressed, etc., without injuriously affecting the patients. Dr. Ochsner, however, would charge against the medical staff the difference between "less than $1" and $3.30 per day, or $2.40 plus per capita, which would represent a waste of "millions and billions of dollars annually" in the United States alone.

Let Dr. Ochsner name his examples. The writer will be pleased to examine the workings of the two institutions, if permitted to do so, and will point out differences in their sanitation and in their care of patients which have apparently escaped Dr. Ochsner's eager but unobservant eye.

S. S. GOLDWATER.

Standardization of Hospitals.

Five years ago the writer presented to the American Hospital Association at Toronto a paper under the title of "Some Scientific Aspects of Hospital Administration," in which it was proposed to create some standards by which hospitals might measure their efficiency. Three years ago the writer presented a petition to the American Medical Association, in convention at St. Louis, asking for the creation of a Hospital Section for the avowed purpose of bringing about the same sort of standardization in hospital efficiency. Nothing was done about it in either association.

Two years ago the writer presented the matter again to the American Medical Association, in convention at Los Angeles, and the House of Delegates, by unanimous vote, created the Hospital Section avowedly because it believed in the writer's proposal to standardize hospital efficiency.

At the Atlantic City meeting in June, 1912, a committee was appointed by the Hospital Section of the American Medical Association to see what could be done about standardization. The committee was composed of Dr. Henry M. Hurd, chairman, Dr. Washburn, of the Massachusetts General Hospital, and the writer. At the meeting of the Surgeons of North America, in New York, in the November following, a committee was created, with Dr. Codman, of Boston, as chairman, and Dr. Kanavel, of Chicago, as secretary, to do what it could to assist in this work.

The Atlantic City committee held some meetings and mapped out a program. The matter was taken up with Surgeon-General Blue, of the Public Health Service, and with the United States Senate committee that has charge of the appropriations for and the activities of the Public Health Service. It was decided that, while the Public Health Service would be able to do this work of standardization, there was no money available for the purpose, and General Blue was obliged to decline. The committee then sought and obtained a conference with Professor Pritchett, president of the Carnegie Foundation, and this conference was held at Professor Pritchett's office in New York early in May last. It was believed by the committee that an agency that had performed so signal a service for medical education as the Carnegie Foundation had done, in its work and subsequent report on the standardization of medical schools, would be the best possible agency to perform a similar service in regard to hospital efficiency. The questions discussed at the conference were: (1) whether and why this work of standardization should be done; (2) who should do this work?—why not the medical profession?—why not the hospital people themselves?—why should the Carnegie Foundation be asked to do it? (3) the scope of the work, (4) the manner in which it should be done.

The result of this conference was that Professor Pritchett asked that the committee go back to the American Medical Association for its approval of the proposal to have the Carnegie Foundation perform this service for the hospitals, and asked, further, that this committee go before the American Hospital Association, at its next convention, and ask for the approval of that organization in the proposal to have the Carnegie Foundation do this work. In the event that both of these great associations should join in asking the Carnegie Foundation to do this work, Professor Pritchett agreed to present the matter to his board of directors at its October meeting and ask their consent that the money be appropriated and the work done.

At the Boston meeting of the American Hospital Association the matter was presented, first, in the writer's paper on "The Inspection and Standardization of Hospitals," and later was crystallized in Dr. Hurd's resolution, which was unanimously adopted by the association, asking that the Carnegie Foundation do this work.

The next step in the proceeding is to present the matter to Professor Pritchett, as agreed upon, and await the decision of the board of trustees of the Carnegie Foundation.

Just a word as to the scope of the work and the method of proceeding. While the Carnegie Foundation is created for the purpose of aiding education, and while a standardization of the hospitals could be undertaken by that organization only in so far as hospital efficiency concerned medical education, yet it may well be conceived that medical education would be aided in the largest way by establishing efficiency in the teaching hospitals, and that efficiency contemplates scientific care of the sick in all its aspects, so that in the broadest construction, if the hospitals are to be inspected and standardized, the scope must include every feature incident to the care of patients, because if students are to be taught in the hospitals—and nearly all effective teaching in the medical schools today is done in connection with hospital work—then they must be taught the employment of

every agency incident to the care of the sick, which includes the physical administration of hospitals as well as the scientific side.

A question arises as to how the problem shall be approached—whether hospitals shall be divided into large and small, teaching and nonteaching, general and special. It goes without saying that two things, in order to be comparable, must be of the same character. One cannot well compare a cow and a sheep, and one could not compare a hospital for the insane with an institution for the care of tuberculosis, except in a very limited way; and one could hardly compare the 20-bed hospital in a rural community with the great metropolitan municipal institution. So it seems that hospitals of the same character and class must be compared, one with the other, and standards must be set that will apply to these classes, in other words, the state hospitals for the insane must be in one class, the great general municipal hospitals must be in a class by themselves, and the large, privately conducted hospitals must be in a class by themselves. Maternity hospitals contain a sufficient number of special features to seem to warrant special classification, and so with children's hospitals. Sanatoriums must be classified by themselves.

It is manifestly impossible for any agency to inspect personally all the hospitals in the United States in any reasonable time, so that without question, if the Carnegie Foundation shall undertake this work of inspection and standardization, it must of necessity select small groups of institutions in each class and begin with their inspection and with the establishment of certain standards for each class. Having gone so far, the time will have arrived when perhaps a broader organization can be established and special agencies of one sort or another employed to continue the work in all parts of the country.

The above are only the individual views of the writer, and must not be construed as representing his committee or the American Medical Association, or the American Hospital Association, except in so far as concerns the general proposal of personal inspection for purposes of standardization.

JOHN A. HORNSBY.

The Boston Meeting.

The officers of the American Hospital Association who arranged and conducted the Boston meeting are entitled to the thanks of all who attended, as it was, from a business and working standpoint, one of the best meetings the association has ever had.

The experiment of dividing the meetings into two sections demonstrated the wisdom of a division of some sort; more valuable work was done than ever before. Many excellent papers were read, and the added time, due to the division which permitted two sections to meet at one time, allowed much valuable discussion that would have otherwise been lost, or so abbreviated as to lose much of real worth.

Four points stand out boldly as features of the Boston meeting: 1, the emphasis given to social service; 2, the willingness of members to discuss vital problems if they can have time enough to make their points effective; 3, the elimination of all social features of the meeting; 4, the unanimity with which the convention adopted Dr. Hurd's resolution asking for the standardization of hospitals, which means that the leaders of hospital thought are eager for some standards by which their efforts toward progress may be guided.

To the reflective observer at the convention one or two thoughts must come: while the excellently planned and admirably executed two-section meeting was a vast improvement over the old one-section-hurry-up, cut-off-all-further-discussion procedure, it may fairly be doubted whether the particular division into large and small hospitals is the best for everybody. There are perhaps fifty people who attend the conventions who are at the head of large, richly supported hospitals, and who have money at their disposal for experimental work in all directions—for the purchase of new apparatus, for new schemes of architectural arrangement, for new methods in administration. It should be the pleasure, as it is certainly the duty, of these people to bring to each convention the results of their empirical labors for the benefit of others—the many others who have not had the same broad opportunities for seeking out for themselves the best things. There were at Boston perhaps three hundred superintendents of small, struggling hospitals, and perhaps their chief object in attending the meeting was to hear what the big rich hospitals had found it best to do about many things. If these three hundred people had to attend the meetings of their own section, they would be deprived of very much valuable discussion. Might it not be best, therefore, in the future to arrange the sections on some other basis—as, for instance, according to general topics? The social service session at Boston was a good illustration of this. Those who were interested in social service knew just where and when to attend. Might it not be possible to have sessions on architecture, on equipment, on housekeeping, on the scientific departments, and so on?

A session on "floors" would draw a crowd, and one meeting on the purchase and use of supplies would be popular. At any rate, a division by topics would seem a better way than according to the size of the hospital.

Although due announcement was made that there would be no formal entertainments for guests at Boston, there was much disappointment, especially on the part of the women members and guests. Attendance on a big convention at the very "hub" of things is something out of the ordinary, and the ladies, nearly every one of them, went to Boston with all their finery in their trunks and never a chance to wear a rag of it. Men can gather over their cigars and steins in the grill rooms and have something of a social time, and little groups of them can dine together. But the ladies must have formal entertainments, which need not be expensive, or they have the alternatives of promenading the corridors of the hotel, which most women refuse, or of remaining in their rooms; or they may go out alone, which is distasteful to most women, especially in a strange city and at night. It may be safely doubted whether the elimination of all the social functions was a success.

The Modern Hospital—A New Entity.

Some one asked not long since what THE MODERN HOSPITAL would do for material when its writers had exhausted all the topics of hospital architecture, equipment, and administration, which he presumed would take three or four months. The query came from one who has administered a very large and splendid hospital for many years. The same question has been repeated many times since the first number of THE MODERN HOSPITAL appeared, with its imposing pages of splendid original articles.

Such a question is worth discussing. It involves another and much larger question: what is the modern hospital, and what are its limitations, and what is it to be in the years to come?

We learn from Mr. Bradley's paper, published in other pages of this number, that approximately only 13 percent of the sick of this country are cared for in the hospitals, while the other 87 percent remain in their homes. Dr. Jordan Lloyd, who made some exhaustive investigations recently, found that 11 percent of the sick of Birmingham, England, were treated in hospitals, bearing out Mr. Bradley's figures.

And yet we are told, with every evidence of truth, that, because of the vast accessories to diagnosis and treatment, available only in the hospital, a sick person cannot be adequately and scientifically cared for today in even the best appointed home. We know also that men and women of wealth are inclined, more and more, to give of their surplus wealth that the poor may also have the benefits of hospital care, and that these same well-to-do people are demanding that the poor and unfortunate shall have every aid of the hospital for the cure of their ills.

Then, what conclusions may we draw for the future of the hospital? Only this, that modern society is eventually to insist that there shall be a bed in a good hospital for every sick and hurt man, woman, and child. If Mr. Bradley's figures are correct, and if the present hospitals are sufficient for only 13 percent of the sick, then how many more hospital beds will be needed to care for the other 87 percent? Or take the other horn of the problem: if the 87 percent are to remain at home, and if they are, in the future, to have adequate care there, who is to see that they get it?

In either event, the hospital is manifestly to take on new duties and far greater obligations than we have heretofore dared to think about.

Already the hospital is a huge institution, and because it has so far outgrown its swaddling clothes it seems almost necessary to coin new words to express its larger meaning.

Only a very small part of the hospital today is confined within four walls, and for convenience we might divide it into three parts: 1, the part known as the hospital proper, for the care of the known sick; 2, the dispensary, whose duty is to determine what is best to be done for the unhappy who come for relief. Some of these are physically sick and are sent to bed in the hospital proper; some need the care of other institutions, such as the tuberculosis sanatoriums, or the psychopathic institutions, or a rest in the country, or a visit to springs or "cures" away from home; others have no physical ailment that need be counted in the presence of far greater mental or financial ills, and these need quite as serious thought and attention as though they possessed some definite pathology that could be determined under the microscope. For all these cases there is, 3, a separate factor or part of the hospital, which, for want of a better name, we call social service.

So that if we begin to sum up the duties of the modern hospital and follow it through all its ramifications, we must go into every home in the land, must invade every stratum of society. Wherever there is a human being, there is a health problem; and wherever human health is concerned, there is a duty for the hospital. Is the question one of sickness, the hospital is to

act; is it the prevention of sickness, the hospital must show the way. Sanitation, hygiene, pure food, good water—right living in a thousand ways, the hospital must lead and teach the people.

And yet one asks what is to be done about topics to discuss?

JOHN ALLAN HORNSBY.

Cost of Food in Hospitals.

Much painstaking effort has been made by careful administrators in this country to determine the proportionate cost of food for various classes of inmates of hospitals—doctors, nurses, common help, and patients. Not very satisfactory results have been obtained, perhaps for the reason that entirely separate kitchens are not maintained for the different classes.

In the large European hospitals, especially in Germany, where there are enough people in the institutions to justify the maintenance of separate living arrangements, apparently reliable figures are published, showing the exact cost per day per capita for the food for each class of hospital residents. In the Rudolph Virchow Hospital, Berlin, which has 2,000 beds, the cost of food is given as follows: for physicians, 2.59 marks; for nurses, 1.94 marks; for the ordinary help, 1.36 marks, and for patients 1.03 marks. This range means that, while food for the doctor costs 60 cents per day, that for the patient costs 25 cents.

The explanation given is that well people eat more than the sick, and the doctor, coming, as he usually does, from a higher social plane than the others, requires food of better quality.

These figures are of value in this country only in the large municipal institutions, where all the patients are "charity," so called. In the semi-private hospitals they are worth less because private patients, or those who pay, are very much better fed than the others. In any event, these figures are interesting, and will furnish food for much profitable study.

Cincinnati's Hospital Situation.

The appeal of Mayor Hunt, of Cincinnati, to the citizens of that city for a supplemental bond issue of $100,000 to finish the new $4,000,000 city hospital fell on deaf ears, and the issue was denied in the recent election. There are two warnings to Mayor Hunt in this action; first, that he cannot play politics with an institution as sacred to the people as a hospital; second, that the people are intelligent enough to see through that sort of public-spiritedness that prates of "duty" and "public service" and "loyalty to the best interests of the people," and at the same time permits a gang of political plunderers to exploit their magnificent new hospital.

THE MODERN HOSPITAL is not in politics, and has no wish to meddle in Cincinnati affairs, but it is very deeply concerned in good hospital service, and it feels that the greatest disgrace in this country today is the continuation in some cities of the practice of exploitation of the hospitals that are maintained for the care of the poor and the helpless.

There is a way to compel private hospitals to maintain a high order of service, by withholding patronage, without which they cannot live; but no such remedy exists in the case of the municipal institutions, and the only way left is to drive out of power any administration anywhere that permits those institutions to be plundered by the politicians and to be infested by incompetents in payment for votes. If Mayor Hunt will look closely at the wall facing his executive office, he will find there a scrawl—indistinct perhaps, but still decipherable—reading something like "Mene, mene, tekel upharsen."

And let other mayors take warning also. The time is come when the hospitals must be built and administered honestly, and entirely separate from politics.

The Small Hospital.

The small hospital is with us to stay a long time. A good many of us believe that the average patient, suffering from one of the commoner diseases, can get about as good care in a well-equipped, well-managed small hospital that has an able medical staff as he can in the million-dollar metropolitan hospital. There are undoubtedly obscure cases that require the expensive paraphernalia of the large hospital to help the doctor to a correct differential diagnosis, but only about one case in fifty is of that character. Let us, therefore, accord to the small hospital a definite place, agree as to its proper limitations, and recognize that it is not the size of the institution that counts, but the size of the people who are conducting it.

New Way to Raise Hospital Funds.

The Chicago **Record-Herald** correspondent at Salem, Ohio, wires his paper as follows:

"Twenty thousand masculine lips pressed those of six fair members of ordinarily well-to-do and locally prominent families in a unique scheme last night whereby $10,000 was raised toward a fund to endow Salem Hospital through the dispensing of women's kisses at $1 each. Men, young and old, stood in line to enjoy the osculatory performance. In all $31,232 was raised, which, with another campaign conducted two years ago, makes $100,000 the town has raised to build the hospital, which has just been completed."

MEETING OF THE AMERICAN HOSPITAL ASSOCIATION.

Fifteenth Annual Conference of the Association in Boston, August 26, 27, 28, and 29—Important Papers Presented and Followed by Interesting Discussions.

MINUTES OF THE MEETING.

TUESDAY MORNING.

Called to order by President Frederic A. Washburn at 10 a. m., August 26, 1913, at the Copley-Plaza Hotel, Boston, Mass.

Invocation by Suffragan Bishop of Massachusetts, Samuel G. Babcock.

Address of welcome by Councilman John J. Attridge, of Boston.

Address by President Washburn.

Report of Committee on Medical Organization and Medical Education, prepared by Dr. Rupert Norton, was read by Dr. R. B. Seem and discussed by Drs. Howard, Wilson, Winford Smith, and Kavanagh.

Motion was made by Dr. Fowler, and carried, that a committee of three be appointed to take up the suggestions made by the president and report at a later session.

A vote of thanks was extended to the president for his valuable address.

The president announced the following committees: on time and place of next meeting, Dr. W. J. Wilson, Miss Riddle, and Asa Bacon; on president's address, Drs. Fowler, Winford Smith, and John M. Peters.

TUESDAY AFTERNOON.

Paper read by Mr. R. M. Bradley — The Relation of Hospital Efficiency to the Efficient Organization for Home Nursing.

Paper read by Miss Mary M. Riddle—The Grading of Nurses.

Printed report submitted by Miss Emma Anderson—Report of Committee to Consider the Grading and Classification of Nurses.

Motion made by Dr. Kavanagh that the committee be continued to work on the report next year, and that Miss Riddle's paper be especially brought to their attention, and that $500 be appropriated to carry on their work.

Amendment offered by Dr. Mann that three members be added to that committee, these members to be men representative of larger hospitals.

Dr. Brown moved an amendment to the amendment to add three members, superintendents of hospitals, who are graduate nurses, which amendment to amendment was put to vote and lost.

Dr. Kavanagh then accepted Dr. Mann's amendment, which was changed to add to the committee the president of the American Hospital Association and one man superintendent representing the larger hospitals. The motion so amended was then carried.

Dr. Kavanagh gave notice that on Thursday morning he would move that section 3 of article IV be struck out of the by-laws, and to strike out of section 1 of the constitution the words, "the committee on nomination of officers, three members."

Dr. Kavanagh also moved that the election of officers be held Thursday morning, which motion carried.

WEDNESDAY MORNING.

A meeting of the Section of Larger Hospitals was held in the lower amphitheater of the out-patient department of the Massachusetts General Hospital.

The Small Hospitals Section met at the Copley-Plaza Hotel. In the absence of Miss Morrison, vice-president, the secretary, Dr. J. N. E. Brown, presided.

Paper read by Mr. G. W. Olson—How the Small Hospitals May Be Made Self-Supporting.

The paper was discussed by Drs. Cook and Fowler, Miss Jordan, Dr. Wheeler, Mr. Palmer, Miss Harty, Dr. Noyes, Dr. Franklin, Miss Goodnow, Dr. Simons, Miss Abbe, Dr. Micell, Mrs. Hayden, and Miss Featherstone.

Miss Margaret M. Moore, who was to have read a paper, being absent, the meeting adjourned.

WEDNESDAY AFTERNOON.

Small Hospitals Section continued.

Paper read by Mr. E. P. Haworth—What the American Hospital Association Can Do for the Hospitals of America.

Discussion by Drs. Fowler, Boyce, and Franklin, and Messrs. G. W. Olson and M. N. Borden.

Dr. Fowler moved that a committee of three be appointed to take up the suggestions made in the paper at the next meeting of the conference.

Dr. Micell moved as an amendment that Mr. Olson be placed on that committee, which amendment was accepted and the motion as amended was carried.

Paper read by Miss Mary Alberta Baker, R. N.—The Employment of Third-Year Pupils as Special Nurses.

Discussion by Dr. Harris, Miss Abbe, and Dr. Boyce.

WEDNESDAY EVENING.

Round table.

Miss Morrison still being absent, Dr. Brown again took the chair, and the question on the program was discussed

OFFICERS OF THE AMERICAN HOSPITAL ASSOCIATION FOR 1913–1914.

PRESIDENT,
DR. THOMAS HOWELL,
Superintendent New York Hospital,
New York City.

FIRST VICE-PRESIDENT,
MR. H. E. WEBSTER,
Superintendent Royal Victoria Hospital
Montreal, Que.

SECOND VICE-PRESIDENT,
MISS MARY A. BAKER,
Superintendent St. Luke's Hospital,
Jacksonville, Fla.

THIRD VICE-PRESIDENT,
MISS MARGARET ROGERS,
Superintendent Jewish Hospital, St. Louis, Mo.

SECRETARY,
DR. H. A. BOYCE,
Superintendent Kingston Hospital, Kingston, Ont.

TREASURER,
MR. ASA BACON,
Superintendent Presbyterian Hospital,
Chicago, Ill.

by the chairman, Miss Harty, Dr. Howland, Dr. Cook, Mr. Borden, Miss Thayer, Miss Perry, Miss Parsons, Dr. Kavanagh, Miss Goodnow, Miss Riddle, Mr. Olson, Miss Byrnes, Dr. Ball, Dr. Franklin, Dr. Simons, Dr. Souder, Dr. Davis, Mrs. Lewis, and Dr. Haworth.

THURSDAY MORNING.

Dr. Washburn presiding.

Report of the Committee on Membership was read and placed on file.

Dr. O'Brien was substituted on the nominating committee in place of Miss Keith, who had notified the president of her inability to be present.

The report of the committee to make recommendations concerning suggestions in the president's address was read by Dr. Fowler.

Motion to adopt was seconded, but the president ruled that, inasmuch as the adoption of the report would mean changes in the by-laws, it would have to lie over.

Dr. Fowler then gave notice that at the next session he would move to amend section 3 of article III, of the constitution by adding after the words "charities," in the fifth line, the words "hospitals, physicians, surgeons, pathologists, and superintendents of nurses."

Motion to adopt report was then put to vote and carried.

Report of committee to memorialize Congress was read and accepted.

Reports of the treasurer and auditing committee were read and accepted.

Motion by Dr. Kavanagh, of which notice had been given Tuesday afternoon, to strike from section 1 of article IV the words, "the president shall appoint a committee on nomination of officers of three members," and to strike out section 3 of article IV, which reads, "the committee on nominations shall," etc., was taken up for consideration and discussed by Drs. Babcock, Kavanagh, Hurd, and Fisher, and Miss Aikens. The motion was then put to vote and unanimously rejected.

Report of Committee on Out-Patient Departments was read by Mr. Davis and discussed by the president and Dr. Fowler.

Paper read by Mr. Sidney E. Goldstein—The Hospital and Dispensary and Social Reform.

The paper was discussed by Dr. Goldwater.

Paper read by Dr. Herbert J. Hall, of Marblehead, Mass.—Medical Workshops as a New Hospital Department.

THURSDAY AFTERNOON.

Dr. Fowler's amendment to the constitution, admitting to associate membership members of the staffs of hospitals, physicians, surgeons, and superintendents of nurses, was called up, put to vote, and unanimously adopted.

Report of Committee on Time and Place of Next Meeting was read by Dr. Wilson, the report recommending that the matter of the time of meeting be left with the Executive Committee, and that the place of meeting be Baltimore.

Mr. Olson moved as an amendment that St. Paul be substituted for Baltimore, which substitution carried, and St. Paul was declared to be the next place of meeting.

The Committee on Nominations reported the following nominees: for president, Dr. Thomas Howell, New York; first vice-president, H. E. Webster, Montreal; second vice-president, Miss Mary A. Baker, Jacksonville, Fla.; third vice-president, Miss Margaret Rogers, St. Louis; secretary, Dr. H. A. Boyce, Kingston; treasurer, Asa Bacon, Chicago.

On motion of Dr. Kavanagh, the report of the Nominating Committee was unanimously adopted, and the secretary instructed to cast the ballot of the association for the nominees.

Resolution submitted by Dr. Goldwater, instructing the Committee on Constitution and By-Laws for the ensuing year to prepare a revised constitution and by-laws, and to specially consider the desirability of providing for the appointment of a paid secretary, was carried unanimously.

Dr. Hurd offered a resolution for the inspection, classification, and standardization of hospitals, which was unanimously adopted. Dr. Hurd stated that it was his desire that the committee be appointed by the incoming president.

Paper read by Dr. Davis L. Edsall—Certain Bearings on Hospital Problems of Compulsory Insurance and Workmen's Compensation.

Paper read by Dr. Matthewson—The Function of the Hospital in Preventive Medicine.

The paper was discussed by Drs. Edward M. Brush and Bloomer, and Mr. Borden.

Paper partially read by Dr. Boyce and motion made that it be printed in the proceedings—National Insurance Act as It Affects Voluntary Hospitals and the Medical Profession of Great Britain.

Report of Committee on Hospital Administration was read by Dr. Babcock and accepted.

THURSDAY EVENING.

Paper read by Dr. Andrew R. Warner—The Place of a Social Service Department in a Medical Institution.

The paper was discussed by Mr. Borden.

PERTINENT POINTS IN THE ADDRESS OF PRESIDENT WASHBURN.

During this meeting a definite plan of inspection and standardization of hospitals will be presented to you. If this work is done under auspices in which we have confidence, it promises a most important step in advance. From the statistics collected we should learn the essentials of a model hospital of each class.

The hospital problems cannot be handled by hospital administrators alone; we need the help and close cooperation of our staff of physicians.

The professional departments of a hospital should each have a single head, with uninterrupted service.

Hospitals are in a particularly advantageous position to help eliminate social disease; able and loyal medical staffs are necessary to do this.

Expensive "hospital days" should not be wasted, either by patients waiting the convenience of the surgeon, or by unnecessary stay in the hospital from sepsis.

How are we to obtain the services of proper men?—only by paying them adequate salaries, and by demanding at least one-half of their time. Their private practices must be secondary.

No harm is done if these men interest themselves in the functions of administration. It hurts none of us to be checked up and given friendly criticism.

About the Small General Hospital.

Too many small hospitals are started without adequate provision for their support.

There is a tendency in some smaller hospitals for members of the staff to attempt surgery for which they have had no adequate training.

No hospital with low standards can ever permanently flourish or do good work.

We should all use our influence against the starting of a hospital until it has been clearly shown that it is necessary; that the location suggested best meets the need; that there is adequate support in evidence, and that its conduct is in the hands of those whose ideals are high and whose methods are practical.

Paper read by Miss Elizabeth V. H. Richards—Social Service in the Out-Patient Department.

The paper was discussed by Miss Cannon, Dr. Babcock, and the president.

Paper read by Miss Glenn—Social Service in the Wards of a General Hospital.

The paper was discussed by the president, Dr. Holt, Dr. Howard, Miss Cannon, and Dr. Hurd.

Paper read by Dr. Roger I. Lee—What Social Service Can Do for the Clinical Physician.

The paper was discussed by Dr. Davis, Miss Cannon, Dr. Press, Dr. Fowler, Mr. Borden, and Mrs. Lewis.

FRIDAY MORNING.

Dr. Washburn presiding.

Report of the Committee on Bureau of Hospital Information was read by Dr. Hurd and adopted.

Report of the Executive Committee on Question of Incorporation was read by Dr. Howland and accepted.

Report of the Committee on Hospital Finances was read by Dr. Mann was discussed by Dr. Howland, the president, Dr. Peters, Dr. Drew, Mr. Coddington, Dr. Souder, and Dr. Simons.

President-elect Dr. Howell was then introduced to the convention, and questions in the question box were taken up for consideration.

On motion of Dr. Boyce a vote of thanks was extended to the management of the hotel for the free use of the meeting room, also to Dr. Holt and members of the Committee on Arrangements, and Miss Goodnow for the noncommercial exhibit.

On motion of Dr. Hurd a vote of thanks was extended to the retiring officers, and especially to Dr. J. N. E. Brown for three years' efficient service as secretary of the association.

Adjourned.

DR. THOMAS HOWELL, PRESIDENT,
Superintendent New York Hospital, New York City.

INTRODUCTION.

Boston provided the best working program the association has probably ever had. There were a great number of extremely important papers that might well be classified under four heads:

1. Those dealing with hospital architecture and equipment, as tending to show the drift of thought among hospital people. There was only one paper that could be placed in this class—viz., that written by Dr. John M. Peters on "New Hospital Construction" and read before the Section on Large Hospitals.

2. Hospital administration. There were several papers under this head—viz., that of Dr. Norton on "Medical Organization;" that of Dr. Hollings, read before the Section on Large Hospitals, on "Record-Keeping at the Massachusetts General;" that of Mr. Olson on "Self-Support of Small Hospitals," and the paper on "Hospital Finance" by Dr. Mann.

3. Those papers that treated of social service, of which there were a great number.

4. The papers on nursing, of which there were more.

If there was a chief feature at the Boston meeting, it was the emphasis laid on social service in the hospital, and it might almost be said that the meeting was a social service meeting, notwithstanding the great amount of nursing talk of all sorts.

The meeting was held in the Copley-Plaza Hotel, and all the sessions were held there except one session of the large hospitals, which was held on Wednesday morning in the Massachusetts General Hospital. There were about 400 members present at the Boston meeting.

The meeting ran smoothly from start to finish, with just enough piquancy furnished by Rev. Dr. Kavanagh and Dr. Fowler, of Louisville, to keep up the interest. There was no friction of any kind and perfect harmony prevailed. Dr. Kavanagh at various times during the meeting objected to a Committee on Nominations of Officers, and proposed a change in the constitution to wipe out that committee, but he was not serious about it, and it seemed that his proposal came rather as an intended emphasis on the necessity for the association to broaden out into a better form of democracy. When Dr. Kavanagh's proposed amendment to the constitution was finally put before the convention, no one voted for it, and yet Dr. Kavanagh had made his point.

THE PROGRAM.

The president's address is published elsewhere in this number. After Dr. Washburn had finished reading his address, there seemed to be a desire on the part of the members to give it more than passing attention, and on motion of Dr. Fowler a committee was appointed to report back during the meeting, to give emphasis by way of recommendations to some proposals in the president's address.

The first paper on the program was that of Dr. Norton on "Medical Organization and Education." Dr. Norton was not present, and his address was read by Dr. R. B. Seem, assistant superintendent of Johns Hopkins Hospital. Dr. Norton's paper dwelt on the necessity for a properly organized medical staff that would look after the patients and also after the education of those who were working in the hospital, as well as the students of schools that were a part of its administration. Dr. Norton went into a good deal of detail about the proposal at Johns Hopkins Hospital to pay chiefs of the various scientific services and to demand of them the greater part of their time. Dr. Washburn, in his address, had already paid high compliment to Johns Hopkins Hospital on the work it had done in regard to the creation of a paid medical staff. Dr. Norton's paper dwelt on the expediency of admitting students to hospital wards, and went into details as to rules that should be enforced for the proper regulation of the student body.

The paper was discussed by Dr. Washburn, Dr. Howard, Dr. Wilson, Dr. Winford Smith, and others. Dr. Howard spoke of the intention to admit students in the Peter Bent Brigham Hospital. He thought the time would come presently when students in the wards of the hospital would

perform all the work now done by ward attendants. He thought special emphasis should be laid on the necessity to train students in thinking from the viewpoint of the patient's welfare, and he thought they should be disciplined carefully in courtesy, kindness, and attention to details for the patient's care and comfort.

Dr. Wilson, of the Contagious Disease Hospital, New York city, thought that if students were to be admitted to the wards, there should be specially trained teachers there instead of the ordinary visiting physicians, and that these teachers should preside at the class ward walks and that they should be the directors of the work of the students, whatever that work might be. Dr. Wilson thought that the expense of these teachers would be a considerable draft on the hospital resources, and that that feature should be very carefully considered in creating an organization for the handling of the student body.

Dr. Winford Smith doubted very much whether the cost was so serious as to justify very much emphasis on it, and he thought there were other credits to be made that would at least cancel the added cost proposed—not in the matter of money, but in service to the community, to the patients, and to the hospital itself. He doubted very much whether a specially trained corps of teachers could be kept in the hospital, because the students would be practically on duty in the wards all the time, and that it would be impossible to maintain a constant surveillance over their work by trained men; he did think, however, that paid heads of departments could vise all the work of students sufficiently to maintain a proper discipline and a high order of scientific care of patients. Dr. Smith spoke of the intern services in the hospital, especially those of Johns Hopkins. The interns who graduate in June begin their one-year service the following September, and they do not have a rotating service, but continue in one service during the whole year. The intern elects the service he is to take and continues at it. There are also "residents"—a physician, surgeon, gynecologist, obstetrician, etc.—and these men are paid salaries. Some of these men have served for five or six years, and Dr. Smith thought that kind of service tended to develop a form of specialism that gave added value to the services of the man in the hospital and gave added value to his earning capacity after he left there.

Dr. Shutt, hospital commissioner of St. Louis, predicted that in a few years the hospitals and medical schools of this country would be amalgamated and operated under the same management, that dormitories for all the students in the schools would be maintained near the hospital, so that the student body would be accessible at all times and the students could do most of the minor ward work. He thought the medical student should live in the hospital during his whole undergraduate period.

Before the adjournment Tuesday noon the president appointed Drs. J. W. Wilson, of New York; Asa Bacon, of Chicago, and Miss Mary M. Riddle, of Newton, Mass., a committee to select the next place of meeting; and Dr. Fowler, Dr. Winford Smith, and Dr. Peters, of Providence, as a committee to consider recommendations in the president's address.

MR. H. E. WEBSTER, FIRST VICE-PRESIDENT,
Superintendent Royal Victoria Hospital,
Montreal, Quebec.

MISS MARGARET ROGERS, THIRD VICE-PRESIDENT,
Superintendent Jewish Hospital, St. Louis, Mo.

The Tuesday afternoon session was devoted to the reading of Mr. Bradley's paper, which is published elsewhere in this number because of its very great importance, on the subject, "The Relation of Hospital Efficiency to the Efficient Organization for Home Nursing," and a paper by Miss Mary M. Riddle, of Newton, Mass., on the subject of "The Grading of Nurses." Miss Riddle's paper was very long and occupied an hour and a half in reading, but contained the best possible argument in favor of high standards for probationer nurses. The only concession Miss Riddle made to those who believe in two or more classes of nurses for different kinds of nursing service was in her reference to the Household Nurse Association of Boston, which is organized to supply whatever kind of care may be required for sickness in the home, the work to be done by graduate nurses, attendants, and household

helpers according to the needs of the case. Miss Riddle commented on this association and its work, saying that it had made some mistakes, but it had also done some good work, though its usefulness could hardly be said to be firmly established. Its purposes she admitted were of the best—whether it can accomplish them is now the question. She thought its proposal to do its work on a business basis added something to the possibility of its success. She thought the same was true of one of the civic associations in one of Boston's nearby suburbs, which does its work under the title of "Community Nursing and Mutual Aid Association." In this association a graduate nurse is furnished when required, and an attendant if only hard work as mother's helper is needed. The supervision of this class of nursing, Miss Riddle thought, foredoomed it to failure. She doubted whether housewives would be willing to turn over the supervision of their home affairs to an outside supervising nurse, as contemplated in this kind of service. Miss Riddle thought the greatest drawback to supplying different kinds of nurses for different cases was the attitude of sick people themselves, some of whom really do not need very highly trained nursing, but all of whom think they do, and none of whom would be satisfied with anything less than a highly trained graduate nurse. Besides, Miss Riddle doubted whether anyone was in position to say that the patient did not need skilled nursing, and she thought there would be a risk in giving him anything less than skilled nursing, no matter what the ailment was. Miss Riddle thought the great middle class, around which the whole nursing problem seems to revolve, is the most important class of people in the world, as well as the largest class, and that this class is entitled to the very best in nursing, as the world has to depend on this class for almost everything that is worth while.

Evidently Miss Riddle has not very much patience with the small hospital's nursing problem, especially the private hospital. She thought such institutions as tuberculosis hospitals are capable of helping themselves, as they do so now by employing specially trained attendants, women not necessarily specially trained in general nursing. She thought the nursing profession should help these special institutions, and should foster their ambitions to secure specially trained nurses without having to take the highly trained general nurse. So far as the small private hospital is concerned, Miss Riddle thinks that if these institutions were to fix their charges against private patients on a basis of what the actual service to them was, rather than on the amount that they might possibly get, she thought there would be more ground for patience with their nursing problems. She saw no reason why nurses should be sacrificed, or even exploited, for the purpose of securing more money to these institutions.

Miss Riddle thinks the status of the nurse's calling is somewhat precarious today, and that we cannot afford to make it more so by adopting any scheme which will make the intelligent, refined young woman turn from that profession, as she will if the standards are lowered. Miss Riddle thought that one of the reasons why there was a scarcity of trained nurses was because boards of health, public schools, sanitary commissions, states, cities, public and private corporations are taking the graduate nurse out of the general nursing field and into specialized work; and she thought the reason the nurse preferred this kind of work was because there seemed to be an opportunity for thought and growth and because it had high standards of admission to it, proving the truth of a statement made in the association last year that "the general esteem in which a vocation is held increases in direct ratio with the educational standards of that vocation;" therefore, she thought that the standards of nursing must be maintained in order to hold good women.

Miss Riddle thinks there is no such thing as an overtrained nurse, but is of the opinion that there are many nurses who are good women, who have good sense and good consciences, and who obtain a very good practical nurse training, and yet who fail when they go out into private practice because their fundamental training has not keyed them up to a proper discrimination between

DR. H. A. BOYCE, SECRETARY,
Superintendent Kingston Hospital, Kingston, Ont.

MR. ASA BACON, TREASURER,
Superintendent Presbyterian Hospital, Chicago, Ill.

their duties and those of the physician, and between what a nurse's duties are ordinarily considered to be and what they can sometimes be made to be.

Miss Riddle believes that any proposed grading of nurses is impractical because they cannot be kept in grades. She believes that it would be a dangerous system to inaugurate because it would encourage the short-course training school in the purely commercial hospital, thus exploiting the nurse taking training, lowering the standards, bringing discredit on the nurse's calling, and reducing the number of good women willing to take up the nurse's work.

The reading of Miss Riddle's paper was followed by the reading of the printed report of the committee on grading of nurses, which was appointed at the Detroit meeting of the association. That report has been published and everyone has seen it.

After Miss Riddle's paper had been read, Miss Anderson stated that the committee appointed last year had met a number of times and had considered the subject of nurse grading in all of its aspects, but that the appropriation had not been sufficient to allow of adequate discussion.

There was a great deal of talk concerning the next move to be made. Dr. Kavanagh proposed that the whole matter be laid over for one year, and that the committee be given an allowance of at least $500 for its work during the year. Dr. Mann doubted whether the committee as it stood is a representative committee, and he proposed to add three members to it, consisting of men who are representatives of the larger hospitals. There was a good deal of discussion as to whether the additional members to the committee should be superintendents of larger hospitals or whether the word "larger" might be left out. During the discussion Dr. Truesdale, who had been a member of the committee during the year, stated that he would refuse to serve longer because he was not in accord with a majority of the committee. President Washburn also stated that he had a letter from Dr. Bruce Smith, the other man on the committee, who stated that he also does not wish to indorse the committee's report. The whole matter of the discussion hinged on the disinclination on the part of the association to adopt the report of Miss Anderson's committee. The matter was finally settled by the adoption of a motion made by Dr. Mann that the president of the association and a man superintendent be added to the committee, that the committee be continued for one year, that an appropriation be made of $500 to pay for its meetings, and that Miss Riddle's paper be referred to that committee.

WEDNESDAY MORNING.

There were two meetings Wednesday morning, one of the large hospitals in the Massachusetts General Hospital, and the other of the small hospitals in the Copley-Plaza Hotel. The large meeting was that of the small hospitals in the Copley-Plaza Hotel. Mr. Olson's paper on "How the Small Hospitals May Be Made Self-Supporting," which was the first paper on the program, will be published in our November issue. It is a very able paper and takes up many administration problems of the small hospitals, and should be of very great help to superintendents and boards and medical staffs of these hospitals. Mr. Olson's paper elicited a long and highly interesting discussion. Dr. Cook, of Natick, Mass., thought the best way to have things done right in the small hospitals, both as to the conduct of the hospital's staff work, the administration, the financing, and all the other problems, was publicity. He thought that if everybody was told all about the hospital, it would create an interest in its affairs. Dr. Cook thought that almost the entire public was ignorant of how hospital finances are conducted. He said the people do not know that the hospitals give any part of their services free to those who have no money. The people suppose, he said, that physicians and surgeons taking care of the charity work in the hospitals are paid for their services. Dr. Fowler, of Poughkeepsie, N. Y., said it was astonishing how little even the most intelligent people in the community know about the financial conduct of their institutions. He thought they would give a great deal more money but for the fact that they are under the impression that every hospital has a great endowment, and that most of the money they ask for is extra and is due to some form of bad management.

The president tried to elicit some further information concerning the point in Mr. Olson's paper in which he recommended the so-called "open-door" hospital. The recommendation was so much at variance with the tenor of Dr. Norton's paper that the president said he would like to have about twenty opinions concerning the open-door hospital and the experience of about twenty superintendents about how they were getting along working under an open-door policy. Dr. Washburn stated that the larger hospitals and the municipal hospitals were opposed to the open door, and advocated the policy of a strictly closed hospital; he thought the case might be entirely different with the small hospitals and those in smaller communities. He wanted some discussion on that.

Miss Nettie Jordan, of Aurora, Ill., said the medical profession had tried in the Illinois State Medical Society to have what she called a "closed surgical clique," which would have ruled out the general profession from the surgical operations of the hospital. That plan fell flat, she said, and then the medical profession tried the same thing in the Illinois Legislature, where it also fell flat. She thought it would be impossible for small hospitals to conduct their institutions without the help of outside physicians, and that the hospital would have to be wide open. She said she represented a 30-bed hospital, and that there were three other hospitals in the town, and that the competition was very keen, and none of these hospitals could afford to have a closed staff. She thought that most superintendents could testify that the work done by the outside men was creditable to any hospital. She thought the reason why the medical profession of Illinois had insisted on the closed hospital was in order that all the surgery of the state would have to be sent to Chicago or some other large city. Miss Jordan spoke again on the subject of hospital finances. She had evidently been driven pretty hard to finance her institution, because the best she could do, she said, was to collect 95 percent, and that left the hospital short; so they instituted a "tag day" and cleared $5,000. She instituted a campaign of publicity—"got on the ground floor with all the newspapers." Then she instituted what she called a publicity campaign to raise money for the specific purpose of constructing a new building and she got $16,000 from 14,000 people.

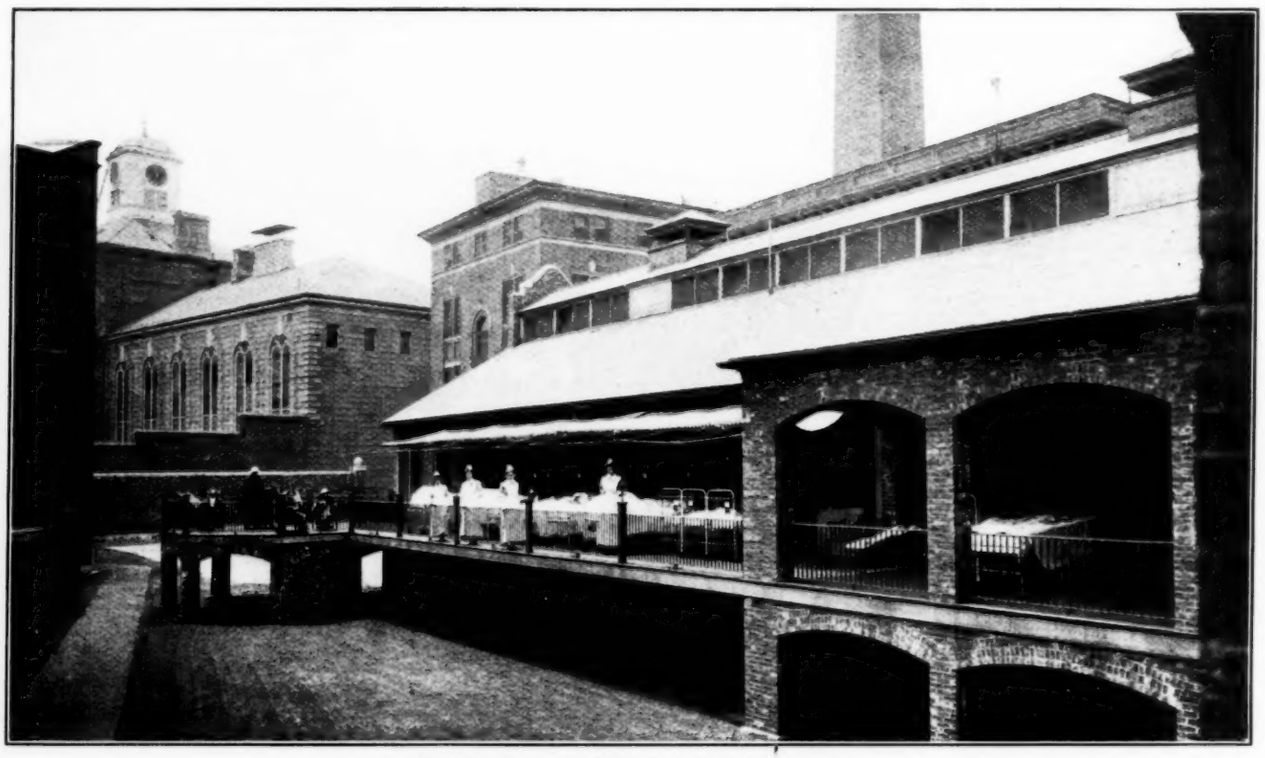
Dr. Wheeler, of Worcester, called attention to the difference of opinion between Mr. Olson and Dr. Cook on the subject of the sources of revenue for a small hospital. Mr. Olson thought that the hospital supported by public taxation should not receive pay patients. Dr. Cook recommended an appeal to the town or county for funds to maintain these small hospitals. Dr. Wheeler agreed with Mr. Olson, and thought that a tax-supported hospital should not look for any part of its support from private patients. Dr. Wheeler believed in a hospital management conducted on a business basis, so that everything humanly

possible could be gotten out of the institution in a proper and independent, self-respecting way, and then, if there were any surplus funds, they could be applied to free work or charity.

Mr. Palmer, of Framingham, congratulated the reader of the paper on his advocacy of the open-door hospital. He had positive feeling on that point. His own hospital had had a wonderful success, and he believed it was chiefly due to the fact that every physician was welcome to bring his patient and take care of him in the wards and in the private rooms.

Miss Hartry, of Minneapolis, had been waiting a number of years for just such a paper as Mr. Olson's. Her own hospital, that of St. Barnabas at Minneapolis, had always been operated as an open hospital, but it had a staff of its own and welcomed outside physicians with their private patients. A year ago her hospital found itself in the peculiar situation of having to add a lot of young, active men as members of the staff or to open the hospital all the way. As an alternative, the board of directors appointed three members of their board, three physicians belonging to the staff, and the superintendent of the hospital, who should compose a committee of seven to take over the management of the institution. After trying this plan some months, she stated it seemed they could not find three doctors who agreed on the same thing and the idea had to be abandoned, and the hospital was finally opened wide in all of its branches. At one place in her talk Miss Hartry deplored conditions as she had found them. When she had finished, Dr. Washburn evidently thought he smelled a good story and he asked, "What was it that made you mourn, Miss Hartry?" "It is too long a story," she said. "Oh, tell it, please," the chairman insisted, and Miss Hartry told the following story: "In a closed hospital there are four or five men to please, and sometimes it is a little hard to please four or five, In an open hospital there are forty-five or fifty-five, as the case may be, and it is a little easier to please the forty-five or the fifty-five. At the same time I never quite could understand why any hospital—especially a hospital not operating for profit, not endowed, not receiving any government or city aid—should operate for five or six men; why these five or six men should, at no cost to themselves, ask any hospital to open a workshop for them where they could, as Mr. Olson says, in a morning make anywhere from $500 to $1,000, go away, leaving us the patient to care for and the burden of the financial expenses."

Dr. Noyes, of Columbia, wanted to reassure the last speaker that she need have no fear of the success of her plan of an open hospital. His institution had been an open hospital for five years, has no staff at all, and has no difficulty in pleasing the men, as they have found it far less difficult to please practitioners in a small general hospital when they all came in on the same basis than where some men are preferred over others. In reply to a question as to what effect the open hospital had on the nurses' training school because of the difference in the technic of different men, Dr. Noyes replied that in his hospital there was a corps of instructors for the nurses and that the doctors cut very little figure; the nurse in private practice had to nurse for forty or fifty doctors and he didn't see any reason why she could not nurse for forty or fifty doctors while she was training.



Massachusetts General Hospital—Orthopedic Ward.

Dr. Franklin, of Dallas, Texas, had had a rather different experience from the last few speakers. They had had a closed hospital for some years, but had a great deal of trouble; and they organized a staff, but still allowed outside physicians to come in with private patients, and they have had no trouble since. One speaker spoke of the difference in the death rate in the open as against the closed hospital, and cited two instances in which the death

rate was higher in the open hospitals than in the closed.

Dr. Noyes took issue with this statement, and doubted very much whether there were not some other circumstances on which the death rate hinged rather than that of the open or closed hospital, and he would want all the facts before conceding any such proposition. The president, discussing the question of the open-door hospital, thought that the two points concerned were the training of the nurse and the likelihood of her getting a poor training, or such a mixed training from men having different technic that she would be entirely spoiled as a nurse; the other point was the question of poor surgery in an open-door hospital. Every once in a while the president had heard of tragedies occurring in open hospitals, of cases being operated on by incompetent men. Miss Abbe, of Ashland, Ohio, told how her board of trustees handled the open-door hospital; no major surgery is allowed without consultation of three members of the staff, and the superintendent is also allowed to call in extra consultation even in medical cases.

Someone wanted to know whether the association had decided what was a small and what was a large hospital for purposes of such discussions as that at hand. The chairman thought no such division had been arbitrarily made, and thought that the association had never passed on the question.

Dr. Noyes created a laugh by suggesting that he thought the question of the large or small hospital was a state of mind; "all those who have problems to solve are small hospitals," he said, "and all those who have all their problems settled belong to the large hospitals."

WEDNESDAY MORNING SESSION OF THE LARGE HOSPITALS.

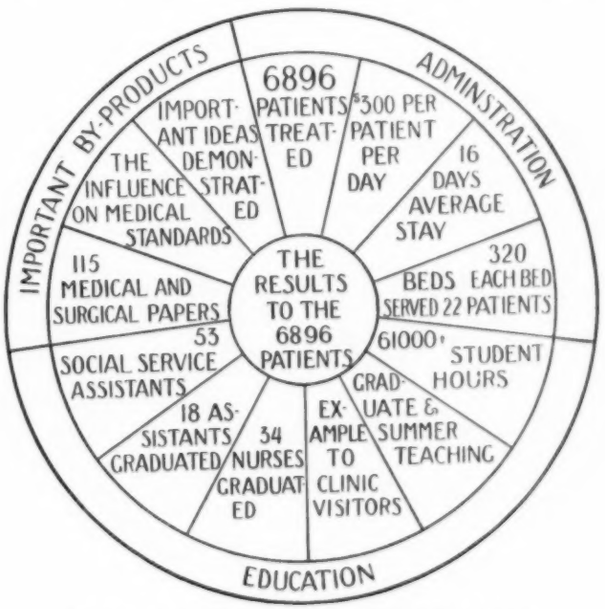
Dr. Hornsby's paper is published elsewhere in this number—not because it is a better paper than many others, or even as good, but because it is on a subject that is perhaps the most important issue before the hospitals of this country at this time, and because the Carnegie Foundation will have been asked to do the work of inspection and classification and standardization of the hospitals before the next number of THE MODERN HOSPITAL is issued, and it was felt that this subject ought to be treated in this number.

In his discussion of Dr. Hornsby's paper, Dr. Codman presented a diagram which is shown herewith. While his discussion was not exactly in line with the purposes of the paper on standardization, it had to do with hospital efficiency, which is the purpose for which standardization is proposed. Dr. Codman made as the hub of his wheel the 6,896 patients in the Massachusetts General Hospital, in which he is one of the surgical staff, during the year 1912. The spokes of the wheel are what Dr. Codman called the "products" of the hospital, and they had to do with the natural results, not only to the patients themselves, which he called "administration," but in the by-products and education, which had to do with service to the public and to students of medicine. Dr. Codman found fault with those who would weigh the results of hospital operation in terms of money. He thought there could be no proper comparison between the amount of money spent and the true results of the hospital's operations, and he felt that any scheme of standardization or classification or inspection must be based on these unfathomable and incalculable items, and said all these items must go into the discussion of the scope which hospital inspection must include if a proper and final reckoning was to be attained.

The general discussions following Dr. Hornsby's paper took a wide range, going to show that there are many indefinite and undefinable items in the administration of a hospital which must be taken into account if hospital efficiency is to be promoted by any inspection and attempt to standardize.

Dr. Washburn thought that Dr. Codman's chief point was that there must be some gauge of the result of the hospital's work, and, so far as the patients were concerned, the best gauge he knew of was a follow-up system, by which the natural results of the treatment of individual cases could be ascertained. He said he knew one hospital which had such a follow-up system, and patients were kept sight of for years to determine the efficiency of the service that had been given to them during their stay in the hospital.

Dr. Hurd found fault with Dr. Codman's analytical summing up of the results of hospital service. He thought Dr. Codman had magnified the indifference of the average hospital superintendent in matters of expenditure of



Products of the Massachusetts General Hospital, 1912.

money. He thought those things were not being neglected and that Dr. Codman was perhaps a little unjust in assuming that the hospital superintendent was always thinking about the dollars and cents phase of his management, and felt that there was another side to the proposition to which Dr. Codman had also not been quite just, and that was the sentimental side of the care of patients. He thought that there were many times when a patient who had ceased to actually need hospital care had to be kept there until certain arrangements had been made because he had nowhere else to go and because he could not be turned loose on the street with a splint or apparatus on. Dr. Hurd also knew hospitals where patients had been followed up year after year and where they were being constantly circularized with a view to determining just what service the hospital had been to them. Dr. Hurd was quite candid in stating that he did not know how inspection and standardization could be done to get the best results. He thought the method proposed of asking the Carnegie Foundation to do the work was the best way, and yet it seemed to him extremely desirable that, whatever scheme was adopted, there should be consultations

with the various committees that had devoted their efforts to bringing about this proposed movement in the interest of efficiency. Dr. Hurd said he had a resolution which would be introduced at the proper time, and which was the expressed sense of the Hospital Section of the American Medical Association on this subject of standardization, and which the American Hospital Association would be asked to approve, and in which the association would be asked to participate.

Mr. R. P. Borden wondered just what was going to happen with reference to the state and how the source of good to the state could be ascertained. He thought the proper method would be to assemble reports of state boards concerning the efficiency of the hospitals under their jurisdiction, establish a standard of excellence from these reports, and the most efficient hospital according to that standard would head the list. Mr. Borden thought that hospital reports could not be very largely taken for granted or believed. He had found in his own experience that hospitals entitled to state or municipal aid on a basis of the number of patients actually cared for were disposed to make false returns; so much so that he had found some hospitals whose returns showed that they were entitled to a certain amount of state aid when in reality an analysis of their figures, based on these returns, would indicate that they had cared for twenty times more patients than they could possibly have taken care of in their institution.

Dr. Goldwater spoke with reference more particularly to standards of efficiency in medical work, and he brought up a point which he has emphasized many times recently —viz., that any hospital advertising itself to take care of the sick should be equipped to take care of a patient, no matter what disease he suffered from or what complications supervened after his admission to the institution. He told of a patient in his own city who had been admitted to an eye hospital and he had afterward developed what the superintendent of the eye institution said was pneumonia. Dr. Goldwater had been asked to take the patient into Mount Sinai because the physicians in the eye hospital could not take care of pneumonia and they wanted the patient transferred. The patient eventually was transferred and was found to be suffering not from pneumonia, but from a very serious surgical injury that had been overlooked in the examination. He thought this institution had no business to take a sick person unless it was equipped to take care of that sick person, no matter what kind of sickness he had or acquired after he entered the hospital.

Dr. Howard thought that any inspection of hospitals by a disinterested, efficient agency would be a vast benefit to any hospital, because the subsequent report would give the hospital management an idea of how an outsider viewed the institution. He did not think that an inspection should be started in too drastic a manner. He thought that a beginning would have to be made, and that it would be a species of missionary work. He thought that every hospital needed inspection, and needed the criticism of some outside, but competent, agency, and these inspections would yield actual results, because the inspectors would go away from the influence of the superintendent of the hospital with whom they had been making the rounds, would be able to sit down and make an analytical summary of his institution and his administration that would be of great service to him.

Psychopathic Hospital, Fenway, Boston—Main Entrance.

In closing the discussion, Dr. Hornsby called attention to the fact that at the time of the inspection and classification of the medical schools by the Carnegie Foundation the sheer force of public opinion, as expressed by the enlightened medical profession, had compelled the acceptance of the standards proposed by the investigating agency, and he believed that any standards made now concerning hospital efficiency would have to be made by an agency which could command the respect of the public and whose final dictum as to hospital efficiency would be enforced by public opinion.

The next paper on the program was that of Dr. Hollings on "Record-Keeping at the Massachusetts General Hospital." This paper will be published in the November

issue of THE MODERN HOSPITAL. It is an important paper, and the system employed in the Massachusetts General Hospital can be made of great service, not only in the large hospitals, but even in the very small ones, because modifications of that system can be made that will lend themselves to any hospital, special or general.

The next paper read was that by Dr. John M. Peters. As predicted last month in anticipation of the Boston program, Dr. Peters' paper was a most valuable contribution. He took up a great number of hospitals that were in course of construction or that were making improvements, and picked out specific items that were worthy of emulation.

WEDNESDAY AFTERNOON.

One of the interesting topics discussed in the conference of the small hospitals on Wednesday afternoon was "The Employment of Nurses in Preference to Interns as Anesthetists." Dr. Brown presided at the discussion. He said there were two ways of giving anesthetics—one of them was by means of interns and the other by trained nurses. In some hospitals that he knew of there were trained nurses, as, for instance, the Mayos, of Rochester, and Crile, of Cleveland. He thought confidence on the part of the patient was a tremendous asset and helped the anesthetists immeasurably. He noticed that quick anesthetics and quick operations, after the manner of Crile, did wonderful things in preventing shock and nausea to the patient.

Miss Harriet Hartry, of St. Barnabas Hospital, Minneapolis, said they employed a trained nurse to give anesthetics, and she had been doing the work for six years, with a total of several thousand anesthetics, with no ill effects. She said the new University of Minnesota Hospital also employed nurses as anesthetists.

Dr. Fowler, of Louisville, said he was so radically opposed to accept either horn of the anesthetic problem proposed that he felt that anything he might say would not be harmonious. He contended that no nurse and no intern ever had sufficient experience to be an anesthetist, and that he was supported in his view by the American Medical Association, which is on record as demanding experienced physicians to give anesthetics. Dr. Fowler thought the nurse did not know enough about physiology and anatomy to be a good anesthetist. At the Louisville City Hospital there was a regular anesthetic staff who gave all of the anesthetics.

Dr. P. E. Truesdale, of Fall River, Mass., thought there was very much well-supported opinion that nurses were quite capable of giving ether. He did not know how far the American Medical Association would go toward the elimination of the nurse as an anesthetist, but he knew of a movement in the state of New York to eliminate her entirely from the position of anesthetist; only the future could determine whether the movement was a sane one or not. He thought the paper of Miss McCall, of Rochester, Minn., published three or four years ago, in which she reported 15,000 cases of anesthesis, was an excellent argument why the nurse has a place as an anesthetist.

Dr. Howland, of the Massachusetts General Hospital, thought the question had not been covered in any of the talks. There was a great deal more to anesthesia than simply giving ether or gas. In the hospital of which he is superintendent there is a department of anesthetics, with a trained physician in charge. This head of the department has an assistant, and these men decide the question of what anesthetic shall be given and how it shall be given. Then the duty of giving it is turned over to a nurse anesthetist, and in his experience this method had been a success; they do not usurp the physician's place, but are a valuable aid, and they are competent to give the anesthetic just as long as there is an experienced physician behind them to direct the work to be done.

Another interesting topic in the same session was, "Is a Preliminary Course Feasible Where the High School Standard of Admission Has Not Been Fully Adopted?"

Miss Thayer, of the City Hospital, Quincy, Mass., thought such a preliminary course would be an excellent thing but for the difficulty attendant on a determination as to just what such a course should consist of. Personally, she thought that this course should consist of chemistry, physics, hygiene, and bacteriology, but said it would be much better if such a preliminary course could be decided by some national organization, such as the American Hospital Association, and that the course should be very carefully thought out before being adopted.

Another interesting topic concerned "The Most Ethical Means of Advertising Small Hospitals."

Miss Mary Burns thought the best way to advertise was to keep the doctor who referred a case to the hospital informed of the progress of his patient.

Dr. Ball, of Philadelphia, thought the best way was to have on the medical staff the best men obtainable and in the training school the best women possible, and at the head of the hospital the best superintendent who could be secured, because, if these three administrative classes are right, the hospital will give efficient service and such service would prove the best possible advertising for the institution.

Dr. Franklin, of Dallas, Tex., and Dr. Simon, of Buffalo, agreed that efficient service was the best advertising the hospital could have. Dr. Souder, of Philadelphia, thought that courtesy in the business office and among all employees of the staff and nurses was the best asset a hospital could have, including promptness, accuracy, and courtesy at the telephone.

Dr. Hornsby, of Chicago, thought that efficiency was the prerequisite to the popularity of a hospital, but did not discuss courtesy, kindness, and attention to patients, because those attributes were a part of efficiency.

Mr. Borden, of New York, thought the question had not been answered, and that ethical advertising was some means by which the general public could know what the institution was doing. It was all right, he thought, to have a good reputation, but that reputation had to be advertised.

Dr. Fowler, of Louisville, thought the question ought to be twisted and that it should read, "How to Prevent People Who Are Able to Pay From Imposing on Charity." He thought it was a common and accepted policy on the part of the public, and that the people were honest in believing that they should have free treatment in any hospital that was supported by any part of the public, and that only education could disabuse their minds of that idea.

THURSDAY MORNING.

The Thursday morning meeting was largely one of business, and a number of committees reported, as follows:

REPORT OF COMMITTEE ON MEMBERSHIP.

To the American Hospital Association:

Your Committee on Membership begs to report that 176 applications for membership have been received, 173 of which appear to be eligible for membership to the Association; 118 of these 173 are superintendents of hospitals, 24 trustees, 16 assistant superintendents, and 15 members of charitable organizations, etc.

According to states, the applicants are divided as fol-

lows: Massachusetts, 34; Pennsylvania, 19; New York, 15; Canada, 14; Ohio, 14; Illinois, 13; Michigan, 9; New Jersey, 8; Minnesota, 5; Kansas, 5; California, 3; Georgia, 3; Kentucky, 3; Maryland, 3; Missouri, 3; Connecticut, Iowa, Maine, Oklahoma, South Carolina, Tennessee, Vermont, and Wisconsin, each 2; Alabama, Alaska, Louisiana, New Hampshire, Philippine Islands, South Africa, and Texas, each 1.

According to the secretary's list, there have been 28 names deleted from the membership as a result mainly of members dying or relinquishing hospital work.

Your committee feels bound to specially commend the efforts of one of its members, Dr. Jas. C. Johnston, of McAlester Hospital, Oklahoma, who at his own expense sent circulars to the superintendents of hospitals in his own and adjoining states, calling attention to the value of membership in the association, and strongly urging his fellow-workers to unite with the organization.

Your committee recommends the reception of the new applicants as members of the association.

Respectfully submitted,

J. N. E. Brown, for Committee.

that he would do so as soon as possible. That is the situation at present.

Your committee would, therefore, report progress, and recommend that a new special Committee on Bureau of Hospital Information be again authorized and appointed at this meeting.

Respectfully submitted,

Winford Smith, Chairman.

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

To the American Hospital Association:

Your committee appointed to take under consideration President Washburn's address and his recommendations begs leave to report as follows:

1. We strongly recommend the general tenor of the address, and recognize it to be a very able contribution to the welfare and improvement of the American Hospital Association.

2. We heartily endorse the recommendation that the association has become too large and its personnel too complex to work to the best advantage in a single section, and

Boston City Hospital—Visit of the American Hospital Association, September, 1905.

REPORT OF COMMITTEE ON BUREAU OF HOSPITAL INFORMATION.

To the American Hospital Association:

When the special Committee on Bureau of Hospital Information was appointed, we found that the previous committee had succeeded in having introduced in both Senate and House a bill for the establishment of a Bureau of Information on Hospitals under the Public Health and Marine Hospital Service. No hearing had even been granted on the bill.

Through Senator Fletcher, sponsor for the bill, a hearing before the Senate committee was granted and held during the last session of the previous Congress, Drs. Hurd, Goldwater, Smith, and Skinner, members of the committee, being present.

The committee was well treated, and felt encouraged by the attitude of the members of the Senate committee. It was, however, pointed out by Senator Williams that the bill under consideration was unnecessary, inasmuch as the Public Health and Marine Hospital Service already had sufficient power to do this work. Senator Fletcher afterwards informed the chairman that Senator Williams was right, and that another bill should be substituted authorizing sufficient funds for the purpose.

In reply to repeated requests for action, Senator Fletcher has said that it had been difficult to find the proper opportunity to introduce the substitute bill, but

we recommend that the association at this conference should authorize the next president and Executive Committee to arrange to meet in as many sections as they may deem expedient.

3. We recommend that his suggestion that the association enlarge its membership by admitting hospital physicians, surgeons, pathologists, and superintendents of nurses as associate members be adopted.

4. We unanimously agree with Dr. Washburn that the ideal medical and surgical hospital work would be best attained by paid chiefs of staff, with continuous service; and, whilst this would apply to many of our larger hospitals, we do not think it practicable to recommend its application to all.

Respectfully submitted,

J. W. Fowler, Chairman,
Dr. Winford Smith,
John M. Peters.

REPORT OF COMMITTEE ON PLACE OF MEETING.

To the American Hospital Association:

Your Committee on Place of Meeting report that for the annual meeting in 1914 the committee decided in favor of Baltimore, believing that the knowledge to be gained there in hospital construction and administration will be of greater value than could be gained in the other cities

considered, and it was only on this account that the committee did not select St. Paul, which city was their second choice.

Respectfully submitted,
ROBERT J. MASON,
ASA BACON,
MARY M. RIDDLE.

REPORT OF COMMITTEE ON CONSTITUTION AND BY-LAWS.

To the American Hospital Association:

In view of the growth of the association and change in the character of its membership, which has taken place since the constitution and by-laws were adopted, the committee recommends that the Committee on Constitution and By-Laws to be appointed for the coming year be instructed to prepare a revised constitution and by-laws, and to especially consider the desirability of providing for the appointment of a paid secretary.

COMMITTEE.

REPORT OF AUDITING COMMITTEE.

To the American Hospital Association:

We hereby certify that we have examined the books and vouchers of the treasurer of the American Hospital Association from September 24, 1912, to September 27, 1913, and beg to report as follows:

Balance on hand September 24, 1912	$1,693.35	
Receipts	3,364.74	$5,058.09
Disbursements		$2,940.12
In hands of treasurer		$2,117.97

Respectfully submitted,
JAMES R. CODDINGTON,
REUBEN O'BRIEN,
H. P. FROST.

Dr. Henry M. Hurd, chairman of the committee of the hospital section of the American Medical Association on standardization, offered the following resolution on standardization:

Whereas, the American Medical Association, through its hospital section, has expressed its approval of the advisability and desirability of classifying and standardizing the larger hospitals of the country to ascertain their fitness to furnish proper clinical facilities for the efficient teaching of medical students and the training of physicians and nurses; therefore, be it

Resolved, that the American Hospital Association cordially approves of the measure as one calculated to greatly increase the efficiency of these hospitals and to improve and standardize their work; and

Resolved, that the American Hospital Association hereby authorizes the appointment of a committee of three persons to consult with a similar committee of the hospital section of the American Medical Association and cooperate with it in promoting the measure.

Dr. Hurd's resolution was unanimously adopted.

There was a large amount of discussion concerning the proposed change in the by-laws providing for a nominating committee on officers of the association. A resolution that had been introduced the day before was presented for final action and was voted down with practical unanimity.

SOCIAL SERVICE SESSION.

One of the best sessions of the whole meeting was that concerning social service, which was taken up immediately after the business meeting Thursday morning. The papers of Mr. Davis, of the Boston Dispensary, and Mr. Goldstein, director of the Free Synagogue, New York, are so important that they will be published in full in the November and December numbers of THE MODERN HOSPITAL, and also the papers of Miss Glenn, Miss Richards, Dr. Warner, and Dr. Lee; the instructive paper of Dr. Herbert A. Hall is published in this issue. Without question, the social service phase of the Boston meeting was its most important feature; so important, indeed, that it will not be possible to do justice to it in one number of THE MODERN HOSPITAL, and it will be discussed in the next few issues.

PRESIDENT'S ADDRESS.[1]

BY FREDERIC A. WASHBURN, M. D.
ADMINISTRATOR MASSACHUSETTS GENERAL HOSPITAL.

The president of this association finds one of his most difficult duties is the preparation of the annual address. My first task when this duty became urgent was to read the messages of my predecessors in office. These addresses have been strong as a rule; they have placed the ideals of hospital administration upon a high plane; they have been worthy of the men who have written them. The topics discussed have been many. Among these I find certain definite recommendations which, as no action has been taken upon them, it is well to again emphasize.

In 1908 Dr. Goldwater was impressed with the fact that the association was becoming too large and its personnel was too complex to work to the greatest advantage in a single section. This is more true today than it was then. At the present conference your president and Executive Committee are attempting in a small way to try the experiment of section work. It will ask you to watch and see whether it is a success, and, if it is, to take action so that your next president and Executive Committee may have the authority of the association for repeating this step and perhaps adding other sections.

Dr. Goldwater also recommended the addition to our membership of hospital physicians, surgeons, pathologists, and superintendents of nurses. By the timely suggestion of Mr. Ludlam, our president in 1906, the association was broadened from a society of hospital superintendents to the American Hospital Association. Can we ever be all that name implies until we admit members of our staff and superintendent of nurses? The hospital problems of the future and of the immediate present cannot be handled by hospital administrators alone; we need the help and close cooperation of our staffs of physicians. As that is the case, they can best discuss these problems with us at our conferences as associate members of this body.

If superintendents of nurses were associate members, I believe that we should have a better understanding of each other's aims and purposes, and that harmony in the hospital world would be promoted. A training school section may very well be one important part of our annual conference.

Let me make a strong plea for such a change in our constitution as will again broaden our membership and make us truly the American Hospital Association.

In 1910 Dr. Howard, then your president, made a most important recommendation. He called attention to the fact that hospitals can best be placed upon a high plane and kept there if some system of inspection is adopted. We all need and would profit by friendly criticism by competent authority. Dr. Howard thought that this could best be done by the individual states. He was influenced in this belief by the successful work in this line done in insane hospitals by the Massachusetts State Board of Insanity. The objection to doing this work by states is that the effect of comparison is lost. We would wish to compare one large general hospital with another doing substantially the same work, to compare the standards of a hospital in the East with one in the West. During this meeting a definite plan for such inspections will be proposed, and the association will be asked to express its approval or disapproval. To me this scheme of inspection, if it can be worked out under auspices in

[1]Read before the American Hospital Association at Boston, August 26, 1913.

which we have confidence, promises a most important step in advance. From the statistics gathered we should eventually learn the essentials of a model hospital of each class. Hospitals would soon learn that a low per capita cost is not the first requisite; that high-grade modern work needs first-rate personnel in all departments, complete system of records, all modern contrivances for scientific research, and a spirit of investigation and teaching. How better can this be brought out than by comparison of hospitals trying to do a similar grade of work? It is, of course, essential that this should be done by a person with the requisite hospital knowledge, and in a spirit of the utmost fairness. Hospital trustees would welcome friendly criticism and suggestion, and the information that their institution is not in all particulars the acme of perfection would do them no harm. When this plan is proposed, I bespeak for it your careful and best thought and favorable consideration.

I now come to the subject upon which I wish to lay special stress in this my presidential message to you—*good organization the prime requisite for medical and surgical efficiency.*

We have to thank John Hopkins for the introduction into this country of paid chiefs of medical and surgical services, with continuous duty.

The great professional departments of a large modern hospital should each have a single head, with a service uninterrupted except for the necessary vacation. This makes possible an effective planning of the work. These heads of departments—or, when the departments are too numerous, representatives of them—to make a committee of not more than five or six, meet with the superintendent of the hospital and consider the problems of medical and surgical administration and the great questions of the medical and surgical policy of the institution. The superintendent should be required by the rules of the trustees to be present at their meetings also. Here we have an efficient organization. The superintendent is able to get the advice of the ablest men on the staff in the many problems where he needs such advice. He is the agent of this small representative body of the staff, of which he is a member, in carrying out their orders where they probably have jurisdiction. By his presence at trustees' meetings he is able to clear up many points which are not entirely clear to his board and to turn their thoughts toward the problems which need their consideration.

Here is an organization which will give us efficiency to meet the great questions which are pressing upon us. Preventive medicine—how can the hospital best help? How cooperate in the prevention of occupational diseases? Social service—how far are we warranted in going? What shall be our attitude toward workmen's compensation and other forms of insurance which affect hospitals? Hospitals are in a particularly advantageous position to help eliminate social disease. Clearheaded judgment is required in this. How shall we steer our course so as to best protect the community at the same time that we guard the rights of the individual and retain his confidence? These are a few of the questions.

We hospital superintendents need all the aid we can get. The staff is a better staff if a small representative committee knows and discusses these hospital problems, and advises and acts upon those subjects over which it properly has authority.

In some hospitals there exists jealousy of the staff by the superintendent, and jealousy of the superintendent by the staff. There will be no better way of doing away with this than by creating an organization which will make trustees, staff, and administration pull together for the good of the whole institution. The chief of a medical or surgical service can no longer give what the modern hospital requires by visiting his patients for an hour or two daily. The hospital should demand that each chief shall devote at least half of each day to its services—that private practice shall be secondary. In this way only can we get the highest efficiency. The ideal chief of service should have youth, yet his judgment must be mature. He must have vigor and enthusiasm. He must be just and generous in recognizing and promoting the efforts of his subordinates. He should be able to plan pieces of investigation for his staff and stimulate their accomplishment. He should see to it that the expensive "hospital days" are not wasted either by patients waiting the convenience of the surgeon for operation or by unnecessary stay in the hospital from sepsis.

How can we obtain such services of such men? Only by paying them adequate salaries. The standard of efficiency of an entirely unpaid medical staff has in many instances been high, but it does not meet the requirements of the present day.

You will perhaps ask me what concern this is of the hospital administrator who is not charged with the treatment of patients. My reply is, that the modern medical administrator of a hospital is not doing his duty by the community or by his trustees by simply attending to the housekeeping or by limiting his duties and responsibilities, as they have often been limited in the past. By acting with a small medical board he should see to it that nominations to the trustees of the men to fill vacancies on the staff are the very best possible, and that when these men are appointed they work for the greatest efficiency of the hospital and not for their personal aggrandizement. The superintendent of the modern hospital, to have the highest efficiency, must keep in touch in a general way with the problems and progress of medicine. The medical board may make efficiency tests of the work of the various departments, or it may delegate this work to a committee reporting to them. Just as it is well for a hospital to submit to inspection and criticism, so it is of advantage to have the different departments examined. In this way we may stimulate careful productive work and prevent slipshod work.

This committee may, for instance, take the records of a number of cases of a certain sort in one out-patient department and examine them to see if the patients received a thorough examination; if all the laboratory tests were made; how many visits there were; the result of treatment, and whether advantage was taken of all the facilities for treatment furnished by the hospital. No harm is done if this committee interests itself in some of the functions of administration. It may well watch the admission of patients in the out-patient department; see if there is unnecessary delay; if applicants are handled with kindness and good judgment. If these duties are not well performed, no one is more desirous of knowing it than the superintendent. It hurts none of us to be checked up and be given friendly criticism.

Let us, then, impress upon our trustees the necessity of paying adequate salaries to these chiefs of service, for we cannot demand from them the work we need until we are prepared to pay for their time. This does not at all mean that we are to throw away the voluntary work of men who make their living by practicing medicine and surgery. Their services are of the greatest value to the

hospital, and the hospital work is of the greatest value to them. The community needs that they should have the experience which only the hospital can give. Inasmuch as the hospital is necessarily secondary to their private practice, they must be content to work under the leadership of those who are paid to make the hospital work their first interest.

My message to the larger hospitals is, then: give more attention to medical and surgical efficiency, and to that end get the right men for chiefs of service and pay them adequately to devote a large measure of time to the hospital.

A word about the small general hospitals. I recognize that much admirable work is done in these institutions. I believe, however, that sometimes too little thought is given to the community need when such a hospital is started. Often a hospital could be erected at a central point which would serve several towns and be able to command better work than could several smaller institutions in the various towns. There is a tendency in some of the smaller hospitals for members of the staff to attempt surgery for which they have no adequate training. In some places this has been a crying scandal. Medical associations are now proposing to license surgeons. This will help a great deal, but there must be developed a public sentiment which will make ignorant surgery impossible. A surgeon of small experience must learn that it is no disgrace to admit that a given patient's chances are better in the hands of another man and transfer the invalid to the metropolitan hospital, if feasible.

Well authenticated report comes to me that in some hospitals in certain sections of the country the standards of deportment, decorum, and, in some instances, even decency, are low. The relations of staff and nurses are altogether too intimate. No hospital with low standards in this particular can ever permanently flourish or do good work. I wonder if this has anything to do with the difficulty of some of these hospitals in getting nurses. To any of you who know that I am justified in making these charges, I leave the answer to this question.

Too many small hospitals are started without adequate provision for their support. The result is a constant struggle and a probable attempt to make the unfortunate nurse in charge carry a greater burden than anyone should be asked to carry, both in hours of work and responsibility.

We should all use our influence against the starting of a hospital until it has been clearly shown that it is necessary, that the location suggested best meets the need, that there is adequate support in evidence, and that its conduct is in the hands of those whose ideals are high and whose methods are practical.

In 1905, when this association last met in Boston, I well remember hearing an honored superintendent of long experience urge that meetings should be held once in three years, because all the subjects of interest to hospital superintendents had been pretty thoroughly discussed. This was just before any adequate realization of the expanding work of the modern hospital and the responsibilities of its administrator. In selecting topics for my words to you, I have been embarrassed not by the paucity of interesting subjects, but by their multiplicity.

I thank you for the honor which you have conferred upon me in making me your president, and it is my most sincere wish that this meeting may be productive of benefit to the hospital world.

Standardization of Medical Schools.

Probably the A. M. A. Council on Medical Education "builded wiser than they knew" when they planned their campaign against inadequate, inefficient and mercenary medical schools which were filling the ranks of the profession with incompetents, says the *Southern Medical Journal*.

The results remind one of the old story of the boy who plucked a pebble from the mountain side and started an avalanche that changed the face of nature.

Not only have the weak, unequipped schools of medicine sought to prolong their existence by uniting with stronger institutions, but in many places where there were two or more reputable colleges competing with each other the effect of the movement has been to cause their consolidation into one strong institution, splendidly equipped and prepared for work of the most admirable character.

Untrained Trustees.

"Very often trustees are men who know nothing whatever of hospital management, who have to be educated in their job, and, once they have become really useful members of the committee, they unfortunately sometimes fail to gain reelection, and the process of education has to be gone over afresh, to the detriment of the hospital," says *The Hospital* (London). "With a strong chairman, difficulties can be tactfully overcome, but it makes the work of managing a hospital more difficult rather than easier; to put it quite bluntly, the real management of a hospital has to be done 'in spite of,' not 'by means of,' their assistance. Where the body of governors is very large and the number of their representatives on the committee is proportionate to their numbers, there is often fussy interference with subordinate officials, nurses, etc., and discipline is undermined."

Legality of the X-Ray.

Very much has been written about the legal status of x-ray plates. For a long time x-ray plates were not allowed in evidence on the ground that their identification was difficult, and the litigant was not in position to know or to prove whether the plate shown was that taken of himself or some one else. More recently methods have been found to satisfy the court on the question of identity, and a number of cases are on record where x-ray plates have gone into evidence.

Now comes up a new point. A judge in Florida appointed a physician to make physical examination of a woman who was suing for personal injury. The physician wanted an x-ray picture, and the woman refused on the ground that she would not be examined in the presence of a third party—the radiographer. The court decided that she had the right to refuse to allow anyone except the appointee of the court to examine her, but he also held that the opposition had the right to an adequate examination, and continued the case until the woman made up her mind to submit to such examination. The case at this stage went to the Supreme Court, which sustained the lower court, but went further and held that the remedy was for the lower court to appoint another physician to assist the first one, and such assistant might be a radiographer as well as physician. In this state of the case the woman will now have to submit to an x-ray examination or abandon her suit.

FOREIGN CORRESPONDENCE

LONDON LETTER.

King's College Hospital—Change of Site and Present General Arrangement.

London, September 4, 1913.

Not a few of those who visited London on the occasion of the recent congress took the opportunity of inspecting the "new" King's College Hospital that has been for several years past gradually rising at Denmark Hill, and that was formally inaugurated by His Majesty only a few weeks ago. Many others will doubtless have heard, or read, something about the new building; but, since several important questions have been raised—or, perhaps, it would be more accurate to say have been settled—by the completion of the task to which the governing body of the hospital first addressed themselves several years ago, it may not be without interest to your readers that I should give some detailed account of what has been done. This, by the courtesy of the secretary, I am now enabled to do. The "old" King's College Hospital—that wherein Fergusson and Lister operated, and such physicians as Bentley Todd and George Budd labored—was really an outcome of the medical department of King's College, an institution founded by royal charter in 1829 "for the purpose of giving instruction in the various branches of literature and science and the doctrines and duties of Christianity as the same are inculcated by the United Church of England and Ireland."

As the college, so long and so splendidly housed in the Strand, gradually developed, and the medical school grew, it was found that hospital practice in the vicinity was, to use the words of the old minute book, "indispensable for the complete education" of the attendant medical students. Steps were therefore taken to found a public hospital in the parish of St. Clement Danes, and in the year 1839 the first King's College Hospital, with 120 beds, came into existence on the site of the old St. Clement Danes Poor House. Ten years later the first hospital was rebuilt at a cost of £50,000, and from the day of its opening until July 15 of the present year continued its beneficent work of healing, the doors being never closed to any deserving case.

But in the days when "King's" was first built its site was in one of the worst quarters of London. Here was a vast congeries of slums and rookeries, with wretched lanes and unsanitary houses, and lurking places of disease, vice, and crime that had existed since the days of the Great Plague and the Great Fire, and that had steadfastly maintained the worst traditions of that Alsatia familiar to all readers of the "Fortunes of Nigel."

In the '70's and '80's, however, an enormous and a far-reaching change was initiated by the clearances incidental to the erection of the Royal Courts of Justice, close to "King's," in Clare Market.

Whole streets were swept away and new arteries for traffic were driven through congested areas, while later, other street improvements, culminating in the opening up of what is now known as Kingsway and as Aldwych, completed the transformation from almost medieval squalor into what is now one of the most splendid quarters of London, imposing with the palaces of jurisprudence and of pleasure, crowded with fine theaters and busy with the activities of a world-wide commerce.

Such changes have involved consequences little thought of, for, now, just as was the case fifty years ago, there are within three-quarters of a mile of the old "King's" three great general hospitals—St. Bartholomew's, Charing Cross, and the Royal Free. Then the accommodation available was not more than sufficient for the needs of the local population; now, with the abolition of the slums and the gradual disappearance of the resident population—since, save for those engaged in newspaper offices and in theaters the district is almost deserted by night—these great hospitals have come to serve not so much local as metropolitan, if not national, purposes. Yet, until a few months ago the huge industrial population of transportive London—south of the Thames—was served only by two large general hospitals—St. Thomas and Guy's.

These points will appear more clearly if reference be made to Fig. 1 of the accompanying illustrations. Now, some twenty years ago a select committee of the House of Lords, recognizing these facts, urged that at the first opportunity either a large general hospital should be built in the midst of this "unprovided" district, or that one of Central London's existing hospitals should be transferred thither.

Various circumstances—and among others certain developments in the organization of medical education in London—determined the Council of King's College, after mature consideration, and with the strong approval and support of the Committee of King Edward's Hospital Fund, to remove the hospital from its depopulated area to South London, where it would serve the needs of some million and a half of the very poor. Difficulties were happily removed, and through the generosity of Viscount Hambledon—better known, perhaps, as the Hon. W. F. D. Smith, chairman of the hospital and of the removal committee—a fine site of twelve acres at Denmark Hill became the property of the institution. This site is a fine one in every sense of the word, for, although in the very center of a densely populated and penurious area, it is on an eminence immediately adjacent to the lovely grounds of Ruskin Park, one of London's finest public open spaces. So not only are the immediate surroundings pleasant, but healthful, and, while the hospital is placed where it can best fulfill local necessities, the absurd incongruity of bringing special cases from a distance to treatment among the crowded streets of Central London is at once abolished. This momentous step of removal having then been decided upon, and the question of site having been so happily resolved, the submission of plans was invited, and eventually a design prepared by Mr. W. A. Pite for a hospital of 600 beds was accepted.

Building operations commenced in 1908, the contractors being Messrs. Foster and Dicksee, of Rugby, and have continued ever since. Of the general architectural character of the building the elevation of the administration block (Fig. 2) will afford some idea. The style is, perhaps, somewhat vaguely spoken of as that of the English renaissance; it is, with variations, that of many mansions

erected during the earlier years of the eighteenth century, and is one, I fancy, pretty well known in England. The materials employed are, for the most part, yellow brick of the kind known as "London stocks," with red dressings, and a moderate use of Portland stone. The roofs are mainly flat and of asphalt, but where this is not so they are covered with green Westmoreland slates, which

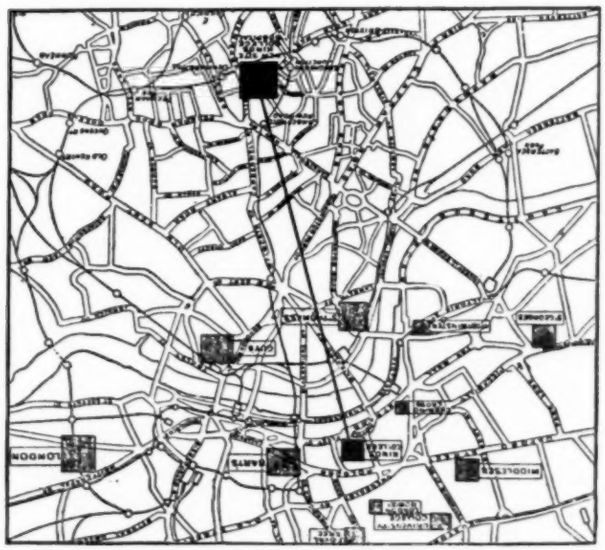


Fig. 1. The two sites.

add a picturesque touch to the building. The composition of the various frontages has been so designed that what little stone has been employed in them has been artistically massed, thus giving greater breadth of treatment.

The illustration (Fig. 3), giving a ground plan, for which also I am indebted to the courtesy of Mr. Tunnard, the secretary, will make the following details clearer than any verbal description:

The administration block which faces Bessemer Road, contains on the ground floor the secretarial offices, board room, resident medical officers' quarters, and a spacious dining hall for nurses. On the first floor are the matron's office and quarters, a class room, and nurses' sitting and bed rooms. The floors above contain nurses' and maids' bed rooms.

The kitchen, which has a fine reinforced concrete roof, is on the basement floor level, between the east and central parts of the administration block. Diet lifts will convey the food to the various levels of the main corridor, whence it will be wheeled on trolleys to the various wards.

This main hospital corridor runs the whole length of the building, linking up every part of the hospital, and is very nearly 900 feet long. From this corridor on the south project the ward blocks, of which five out of the eight provided for in the complete scheme are already built. The two central ones are the King Edward VII. and the King George V. Between these are the chapel, with linen department beneath it, and the power station. The administration block is on the opposite side of the main corridor. Owing to the conformation of the site, the lowest wards are on the first floor level of the administration block.

The chapel is entered through a narthex behind the main staircase, and it has seating accommodation for 250. The roof is supported on ferro-concrete piers, and the keynote of the decorative scheme is simplicity. The organ, pulpit, stained glass windows, and some of the seats have been transferred from the chapel of the old hospital. The fittings of the chapel are eminently worthy and dignified, and have been obtained in great measure by the generous endeavor of the sister matron and nursing staff of the hospital.

The power station, an important part of so large a building, is exceedingly interesting. Access to it is gained through basement corridors in the two central ward blocks. Here steam heating for the whole building is generated in the boiler house, and the electric power is generated in the engine room. There is also a destructor and a refrigerating and cold storage department. Electric clocks and an automatic telephone system have been installed. The magnitude of what we may term the engineering details of the undertaking is impressive. Thus, the provision of the plant for generating and distributing electricity and supplying heat and hot water to the hospital involves a very large installation. In this case it has been found advisable to generate the electricity by dynamos driven by Diesel oil engines of 250 kilowatts capacity. The waste heat from these is utilized partly in partially heating the hot water before passing to the calorifiers, and partly in heating air before its introduction to boilers which are used for providing heat and hot water. These consist of three Lancashire boilers capable of evaporating 16,500 pounds of water per hour, and four calorifiers of suitable capacity for supplying the whole of the hot water.

The heating is done by low-pressure steam, all the condensed water being returned direct to the boilers, and involves eighteen miles of steam piping and seven miles of hot water piping, the total number of radiators exceeding 1,000. There are over two miles of electric mains and submains, while the wiring to supply the electric lamps of a total of 93,608 candle power will amount to nearly a hundred miles. To cool the meat store and other rooms to a temperature of 28° F. to 35° F., as well as to provide the

Fig. 2. King's College Hospital, Denmark Hill—Administration block.

ice required for the hospital, a plant has been installed of a capacity equivalent to the manufacture of ten tons of ice per day. In addition there is a large number of electric fans for controlling the mechanical ventilation of the hospital. Each room is supplied with an adequate amount of fresh air, introduced through openings behind the radiators, so that it enters the building at a temperature which will prevent draught.

The casualty department provides for the immediate treatment of major and minor casualties, both medical and surgical. The examining rooms are placed on each side of the waiting hall. A separate entrance, leading to the surgery, is provided for the admission of serious accidents. On the first floor a small observation ward, complete with ward kitchen, etc., is provided for the reception of urgent cases which are desired to be kept under observation prior to being admitted to the ward proper. This ward contains 8 beds, each being placed in a separate glass-screened cubicle.

The bathing department on the ground floor provides for the treatment of patients with various medical baths. On the first floor is the electrical, x-ray and massage department.

The out-patients' department is entered through registering offices to a large waiting hall, 93 by 42 feet in size, with a permanent refreshment buffet in the center. On each side of the hall there are corridors, that on the north giving access to the surgical consulting rooms with operating theater, and the ophthalmic department with operating theater; that on the south to the children's department (with separate entrance for whooping-cough cases), the medical consulting rooms, and throat and ear department. The whole is so arranged that patients, when they have seen the doctor, do not need to retrace their steps to the waiting hall again. Above the rooms on the south side is the dental department, which is finely lighted; and beyond the waiting hall, on the ground floor, is the gynecological department. From the side corridors access is gained to the dispensary waiting hall, out of which leads the almoner's department. The patients receive their medicines through serving hatches from the dispensary, and then pass out of the building by another corridor. Thus the traffic stream in each corridor unites in the dispensary hall, and from that point leaves the hospital. The dispensary itself, behind which are dispensers' apartments and teaching laboratory, with various manufacturing departments and stores, is in the basement, and is connected with the main corridor, of which mention has already been made.

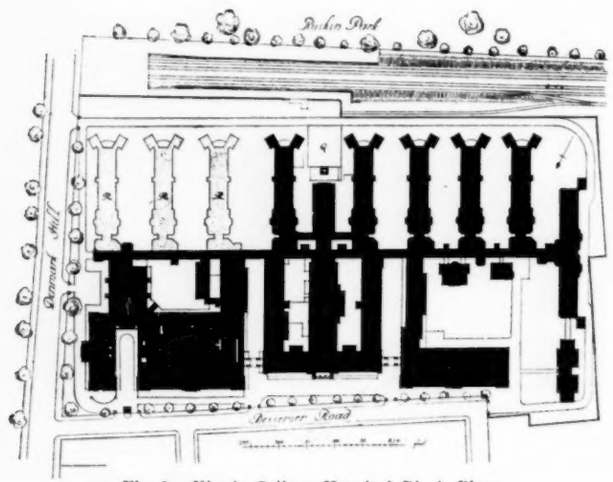


Fig. 3. King's College Hospital Block Plan.

A, casualty department; B, baths and electrical department; C, out-patient department; D, almoner; E, dispensary; F, administration block; G, pathological and post-mortem block; H, medical school; J, operation theaters; K, gynecological and clinical theaters; L, isolation block; M, special ward block; N, two-story ward blocks; O, three-story ward blocks; P, chapel; Q, central station; R, ward blocks, future extension.

The wards, which are arranged to stand at the top of Denmark Hill in a long, stately row, contain 24 beds each. At the southern extremity of each ward are sun balconies between the flanking sanitary annexes, which act as screens from the east and west winds. Between the wards proper and the great corridor are day rooms, ward kitchens, ward sisters' rooms, etc.

The pathological and post-mortem block is on the same side of the main corridor as the administration block, and in it a small mortuary chapel is provided. Between this and the north wing of the special ward block are two operation theater blocks of two stories each, and in the northwest corner of the site is an isolation block for infectious diseases, with accommodation for eight persons. The bird's-eye view plan (Fig. 4) will assist in following these details:

Concerning the financial side of the undertaking it may be said that, since in a hospital it is, of course, now considered absolutely essential that everything should be of the best, the expenditure of large sums of money is involved. Roughly speaking, the funds already raised for the removal amount to about £370,000, and before the fund has finished its work at least another £150,000 will be required.

The largest individual donation which the removal fund has received amounted to £50,000, which was given by an anonymous donor in May, 1912, and reached the appeal secretary in the form of two checks for £30,000 and £20,000, respectively. But, from the beginning, the effort has received very generous support, not only from private individuals, but also from the great city companies, and notably from King Edward's Hospital Fund, the contributions received from which amount to close on £50,000. The initiation of the new King's College Hospital was one of the last works of its kind undertaken by the late King Edward VII., who set the seal of his approval on this great scheme for the hospital accommodation of London when he graciously laid the foundation stone on July 20, 1909, just four years earlier than the inauguration of the hospital by our present sovereign on July 26 of this year, and his words on that memorable occasion are at once an explanation of the undertaking and an abiding appeal for its whole-hearted support: "The King's College Hospital has done a great work in the past, but its future utility in the building which will spring up where we now stand will be even greater. The huge population in the midst of which it is situated will have the advantage of easy access to its services, and the scientific and administrative work of the institution will reap the advantage of the more commodious premises. There can be no nobler aim for benevolence and public support than the care of the sick and suffering."

As said at the outset, the completion of this really notable achievement, on which all concerned are without doubt sincerely to be congratulated, involves the consideration of some very important questions. In the first place, we have to recognize that the topographical disposition of our hospitals to the best advantage has to be considered very seriously, both from the point of view of efficient philanthropy and from that of what is not less, if less directly, humanitarian—the provision of clinical material and the maintenance of the efficiency of our medical schools. The remarkable alterations in our facilities for transportation are so altering the distribution of the working classes to a degree undreamt of only a few years back. That the laborer is now conducted miles for a penny, and no longer lives where he works. Then, again, the inconsistency in preaching hygiene and yet conducting operations—not of necessity, but of election—

in the very heart of a smoky and dirty metropolis can no longer be blinked. At the new "King's", by good fortune, the twelve-acre site on the top of a hill with immediate proximity to woodlands, while yet only the shortest of distances from miles of mean streets on lower levels below, affords almost romantic opportunity for the relief of the physical distresses and disease of the poverty stricken on the very spot whereon, until only a few years ago, London's wealthier citizens were wont to devise their surburban retreats.

But there are other questions. Medical men practicing near Denmark Hill, until recently at any rate, exhibited signs of some alarm at what they deemed threatened interference with their livelihood by the perfected attractions of our most modern hospital. These difficulties have, however, I believe, been resolved, and the insurance act has not been without its effect in varying the circumstances. Again, Denmark Hill is some distance from Harley street and its immediate vicinity, wherein alone what the public calls "hospital doctors" are expected to reside, even in these days of motor cars. It is possible that what some have long prophesied may come to pass—that consulting physicians and surgeons, or at any rate those who are junior, will become disseminated throughout London, and not be aggregated congestively in any one quarter. It is certainly probable that what Harvey Cushing, Osler, and Moore have suggested—that the general practitioner should become linked up with the hospital system—will also gradually come to pass.

Another point is that the unifying tendency which, a few years ago, was manifested among the medical schools—a tendency toward amalgamation or federation with the synthesis of one great faculty of medicine for London—has, for good or for evil, been stayed. Some think it best that the individuality of the separate medical schools be maintained; others, that the medical student who knows none but his own particular hospital teachers is apt to exhibit that most distressing variety of provincialism so often met with, by a strange contradiction, in the world's greatest metropolis—that provincialism of the Londoner who sees and desires nothing but what is forced upon him, and who conceitedly ignores aught else.

The move made by King's College Hospital is one that was inevitable. It is one that ought to have been made, and it is one that has been made splendidly and successfully. Already other hospitals are talking of migration. St. George's and Westminster are going to unite, to destroy their nests, and, like phoenixes, to rise again—but elsewhere. Much the same considerations dictate their move as have dictated the flitting of "King's" from Clare Market to Denmark Hill.

But it must not be forgotten that the value of the sites now occupied by these institutions is enormous, and that the sums for which they will be sold will enable rebuilding to be carried out, perhaps without the necessity for appeal to the charitable, or, if such appeals are successfully made, with very substantial accrument to the endowment funds.

On the other hand, complaint is already being made in the press that the removal of these hospitals to outlying districts will leave central areas ill equipped for dealing with accidents that may occur. This difficulty will doubtless be overcome by the provision of receiving stations; but the fact, however, that it has been stated serves at any rate to show how complex are the problems involved, and how greatly the public has come to expect, as a right, the devoted service of those who now labor in voluntary hospitals.

BERLIN LETTER.

Das Städtische Rudolph Virchow Krankenhaus in Berlin—Some Explanation.

Berlin, September 15, 1913.

Some years ago I wrote about the Virchow hospital in Berlin. So many descriptions of it had been written even at that time and so much said about the vast extent of its buildings, the number of acres of ground that it covered, the great army of physicians and servants required for its operation, and what not, that I very carefully refrained from giving any detail whatever about the institution, but instead wrote a rather cubist sort of letter, which I thought would at least possess the supposed charm of originality, even if lacking in facts.

The result was that after my return home I received a call from a German physician, who informed me that I was either very ignorant, or lacking in courtesy, or didn't understand the German language sufficiently well to attempt to see anything, else I could never have gotten such a worm's-eyed view of a great German institution and one moreover entirely devoid of facts.

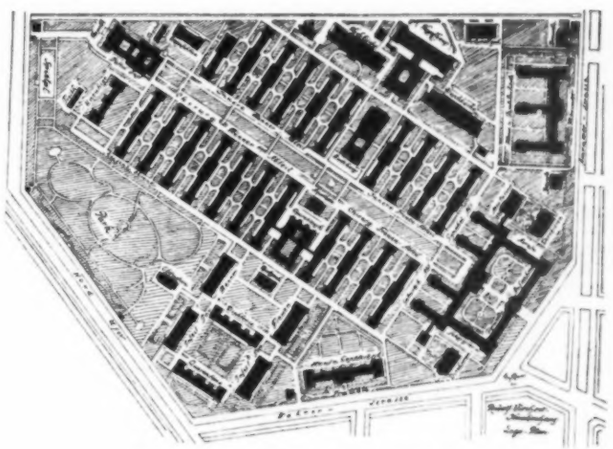


Fig. 1. Virchow Hospital. Ground plan.

It gives me great pleasure, therefore (as the after-dinner speaker says), to have the opportunity of correcting the impression of my German friend and of supplying all the facts, which, by the way, are handed out to visitors in the form of a neat booklet, even printed in the language of the ignorant foreigner. For whatever else the Rudolph Virchow Krankenhaus may or may not be, it certainly is one of the show places of Berlin, and the tourist who comes to the great German capital has to see it just as he has to see the tomb of Napoleon in Paris, the Tower in London, or the Prado in Madrid.

Frankly, I doubt if the Germans will ever build another hospital like the Virchow. It is possible that we in America, carried away by our present hospital enthusiasm and having convinced some of our multimillionaires that other countries have us "skun a mile" on hospital construction, may do it, and do it on a scale multiplied by ten. But the idea seems to prevail here that the results obtained at the Virchow have not justified its cost. In fact, there has been trouble after trouble at this institution. One may say the hospital is not to blame—it may be the personnel. But here comes in, again, the difficulty of perfecting the organization of such a large and varied service. It is difficult indeed to get a harmonious interaction of the wide-spread and different units unless a master hand is in

control, and even then there is not the smoothness of a perfectly assembled small machine.

Some "fin gourmet" once said that, to eat well, one must eat in a small restaurant. So do I believe that, to get well, one can best do it in a small hospital.

But to return to our facts, which I accept from the little book. The Rudolph Virchow hospital was begun in

Fig. 2. Virchow Hospital. General view, showing double pavilion, with central administration building.

1899 and finished in 1906. The situation and appearance of the fifty-seven buildings can be seen by reference to the plan. The hospital has 2,000 beds, and cost, including all furnishings, 19,000,000 marks, which means in real money about $5,000 per bed. Briefly, it is a very expensive village, covering sixty-three and a half acres of ground.

All of the buildings are connected by underground floors, or tunnels, which convey the steam and water pipes, and wires for electric power, light, and telephones.

All rooms in which there are patients are heated by water; other buildings—such as offices, lodgings for help, and out-houses not for patients—are heated by low-pressure steam. This steam is also used for sterilization for surgical material, preparation of sterilized water, disinfection, lavatory, and any other needs.

For ventilation, fresh air is sucked in from out of doors, filtered, heated, and distributed according to the Rabiz system. Used air is mechanically sucked out. In addition, there is trap window ventilation. All lighting is by electricity, which is supplied by the electrical works of the hospital itself. There are 9,118 lights inside the buildings, including 59 arc lights and 222 lights on the grounds to interfere with the evening amusement of the nurses and interns.

The hospital possesses a central telephone station, communicating with 95 inside stations, 20 of which can be used for outside communication. (Two years ago the St. Louis City Hospital possessed one telephone which could be used for outside communication.) The hospital has also its own water works, and the little book says that "the water comes up in physical, chemical, and bacteriological respects in every respect to all hygienic demands." An ice machine can turn out 22,000 kilos of ice every twenty-four hours.

There is, of course, a great disinfecting plant, and patients' clothes after disinfection are kept in a dust-proof wardrobe.

In my previous letter I went into some detail regarding the laundry and the kitchen, but here, again, my German friend did not approve. He said he didn't believe that even the Virchow hospital possessed a machine that would take an ordinary dirty calico wrapper and in half an hour convert it into a clean, starched, and ironed pink chiffon hobble skirt and peek-a-boo shirt waist of latest Parisian design. Also he said that my statement that the filet of sole was not as good here as at Marguery's was unfair, because Marguery's was a restaurant and not a hospital, and, besides, filet of sole was not proper food for patients anyway. In any event, there is a special room here for the manufacture of sausages, and that is more than any Paris restaurant possesses. Moreover, the cellars for the cooking and drawing of beer and storing of wine might be considered somewhat luxurious by some of our American friends.

Food is conveyed to the wards by means of special carts built somewhat on the order of a thermos bottle. The carts are kept hot in a special heated cart house built near the kitchen, so that the patients have no complaints to make about their frankfurters being served cold.

There are eleven distinct divisions in the hospital, of which the first eight have to do with bed patients. Those are divided in the usual way into medical, surgical, infectious, specialties, and so on. This includes a division for "troublesome patients," for whom it appears there are only 18 beds reserved out of the 2,000. German patients must be very peaceful. Finally, to take care of all this array of buildings and grounds and patients and machinery, there are 103 physicians, 4 apothecaries, 543 nurses and attendants, 20 office clerks, 50 persons for technical service, as also inspectors and managers, and 305 domestic servants.

The hospital receives 3 marks (75 cents) a day for each patient. There is no system of classes. The details of the financial arrangements of the Berlin hospital I have written about previously.

Of course, this institution possesses also numerous laboratories and a large pathologic-anatomic institute, but such features I would like to reserve for a special laboratory letter.

Naturally, in such a great hospital as this we find famous men at the head of the various services. Still, there was not the great rush for places here by the geheimrat professors of Berlin as would have happened perhaps in an American city under the same circumstances. In Berlin, tradition demands that certain positions remain fixed—thus, Bier remains at "Langenbeckhaus" and Bumm stays at the Frauenklinik on Artillerie strasse, and His and Kraus at the Charité, because tradition demands that these places must be occupied by the greatest men. However, at the Virchow hospital we find Borchardt and Hermes in surgery, Kutner in internal medicine, Koblanck in women's diseases, Hartmann in nose and throat, Jochmann in infectious diseases, and many others equally well known.

If you go out to the hospital on a Saturday morning and see in one corner of the grounds a great crowd massed together and shifting to and fro, you may think that there has been an accident—that an automobile has hit the crown prince or that Zeppelin has fallen from his air ship, and all the people in that quarter of Berlin have collected to see the fatality. But you will be mistaken—you have only happened onto Wechselmann's clinic, and the people you see are his patients waiting for their inspection of salvarsan.

R. L. Thompson, M. D.,
Professor of Pathology, St. Louis University School of Medicine.

A sanatorium for tired business men is planned for Painesville, Ohio. Dr. John T. Frawley, of Cleveland, is interested in the project, which is to be made possible with Chicago capital.

CURRENT HOSPITAL LITERATURE

Modern Hospitals. Jour. Am. Med. Assn., September 6.

There are brief descriptions and some photographs of the Barnes Hospital, St. Louis, and the Peter Bent Brigham Hospital, Boston.

Social Service Department of Lakeside Hospital. Cleveland, second report.

This is a most illuminating booklet of 30 pages. It gives the reader an intimate acquaintance with methods of conducting a hospital social service department in every branch.

Report of the Lupus Institute in Vienna. Correspondence Journal A. M. A., September 6, 1913, p. 784.

In this institute 2,061 cases have been treated in the three years of its existence. Cases were received from all over the world. Surgery, by excision, the Finsen light, and x-rays are used. Methods of treatment are described in a superficial way.

Procedure in Relation to Contagious Diseases. New York City Bulletin of the Board of Health, August 16.

Some excellent matter is contained in this bulletin, the character of which will be obvious from the several headings, as follows: 1, How to keep from getting and spreading contagious diseases; 2, Precautions in cases of diphtheria, scarlet fever, and measles; 3, Disinfection after illness is over.

A Year's Experience with Spinal Anesthesia. Dr. H. J. Donaldson. Am. Jour. Surg., September, 1913.

The author compares stovaine and ether, and finds the former more effective. He points out the selective cases for each. There were 234 patients operated upon in the hospital, in 219 of which there was complete anesthesia with stovaine. In 15 cases it was necessary to give a second injection or a little ether.

A Successful Summer Ward-cooling System. Editorial in the Am. Jour. Surg., September, 1913.

The editor gives some of the details concerning the small refrigeration plant operations at Mt. Sinai Hospital during the past summer. The cost for operating the four-bed ward was $1 per day. In conclusion the editor says: "We venture to predict that within a few years the plans for hospitals in most sections of this country will include a system for cooling at least some of its wards."

Home Management of Tuberculosis. Thomas Spees Carrington, M. D. British Journal of Tuberculosis, July, 1913.

This is the well-worn out-of-door treatment, but the article is valuable because of the many photographs showing ingenious devices for providing for this treatment under varying architectural conditions, from the flat roofs of the poorest tenement quarters to the windowed and screened porches of the wealthy. It even tells how to make the out-of-door bed like a "sleeping bag" of the Klondike.

The Egyptian Hospital Ship "Bahr Ahmar" of the Red Crescent Mission. Surgeon D. N. Carpenter, United States Navy. The Military Surgeon, September.

This is the story of the one bright spot in the lurid picture of the recent war in southeastern Europe. A description of the ship is given, with details of her equipment for the care of sick and wounded soldiers. The Egyptian Red Crescent Mission conducted the operations of the ship and did splendid service.

Outdoor Treatment of Scarlet Fever. H. M. Cargin and T. Graham Shand. Public Health, August.

This is an account of the employment of an open-air method in a hospital which had no ward room or other available space for properly handling the communicable diseases. The method could be employed in any institution with doors large enough to admit the passage of a bed. Both severe and mild cases were treated out of doors, and the efficiency of the method was marked in all cases by lowered temperature and better general condition in from twenty-four to forty-eight hours.

Discussion on Hospitals in Relation to the State, the Public and the Medical Profession. Brit. Med. Jour., London, 1913, August 2, 238-243.

In the section of medical sociology at the eighty-first annual meeting of the British Medical Association there was an interesting discussion on hospitals, to which Benjamin Moore contributed the opening address; I. G. Gibbon, a paper on the municipal hospital in Germany from the financial standpoint; Professor Pfeiffer, of Essen, a short paper on salaries; and Dr. Grober, of Jena, on the German hospital and German insurance legislation.

Institutions for the Tuberculous. The Mt. Vernon Hospital, Middlesex, England. British Journal of Tuberculosis, July, 1913.

From the descriptions, photographs and drawings, this must be one of the finest sanatoriums imaginable. Though it is not quite new—parts of it nine years old—many additions have been made until there are now a dozen or more one-story pavilions. The site, character of soil on which it is built, the architecture, arrangement of space, all are described in detail, even to the big open fireplaces. The article should be read by those who contemplate this sort of construction.

Sanatorium Treatment of Children (Sanatoriumsbehandlung bei Kindern). H. Spiegelberg. Aerztl. Runcach., München, 1913, XXIII, July 19, 337-342.

Spiegelberg discusses the important question of sanatoriums intended especially for children, but more particularly institutions for nervous children and neuropathic cases. Germany is far in advance of other nations in providing for the care of its weakling children, not only for the benefit of the unfortunates, but to make valuable citizens of those whose lives would otherwise be useless to the community. Open-air sanatorium schools, mountain and seaside homes for tuberculous children, convalescent homes and institutions for cripples are also discussed.

The Private Laboratory—Does It Pay? C. U. Moore, M. D. Journal-Lancet, Minneapolis, September 15, 506.

The author recently sent out a circular letter to obtain some information as to what was being done in a laboratory way by busy physicians having practices of $5,000 or $6,000. He proceeds to a discussion of the variety of work required in modern practice. There are several ways for such a physician to obtain his laboratory work; 1, by doing it himself; 2, by hiring an assistant to

do it; 3, by getting it done in a commercial laboratory when one is available; 4, by getting it done in a nearby hospital when possible; 5, by having the state do it in laboratories maintained for the purpose.

The author advises the physician to do his own work. He computes that an adequate laboratory need not cost more than $80, and that there will be a 400-percent profit, not counting the satisfaction in knowing what one is doing first hand.

Two Turkish Hospitals. Surgeon D. N. Carpenter, United States Navy. The Military Surgeon, August, 1913.

During the recent Balkan wars Major Clyde Ford, United States Army, was the main reliance in Constantinople for organization of first aid, had charge of the surgery upon the soldiers sent to the rear from Scutari and Adrianople, and also created the organization for handling the cholera epidemic that came upon the heels of war. There were two great base hospitals at Smyrna, one military, supported by the Ottoman government, and one civil, conducted under the auspices of the citizens of Smyrna. Patients were brought to these hospitals from the battle fields of Salonika and Monastir on the hospital ship Bahr Ahmar. Dr. Carpenter describes these hospitals. Both seem to have been quite modern, aside from the fact that they had no very good lighting system, and no heating system at all, due to the mild climate. The civil hospital has 300 beds, but added 100 more during the pressure of the war. It is only 12 years old, is built of stone and concrete, with rounded cove bases extending up the walls from the concrete floors, thus rendering it possible to maintain cleanliness. The hospital is built in three pavilions two stories high, and the wards are small, the largest containing 30 beds. Wide corridors connect the pavilions. The beds and all ward furniture are iron, excepting the bedside tables, which are of wood. Blankets, but no sheets are used. Oil stoves furnish what little heat is required in winter, and gas with argand burners furnish the illumination. There is an excellent laboratory, with an animal house, showing that some research work is attempted. The superintendent is a "hoje," or holy man, and he is assisted by an excellent clerical staff. Dr. Moustafa Enver, a man of high attainments, is chief surgeon.

How Can Cross-Infection be Prevented in a Hospital for Communicable Disease? M. B. White. Canad. Jour. Med. and Surg., Toronto, 1913, XXXIV, August, 117-121.

A new responsibility has devolved upon the community which undertakes to diminish communicable disease by segregating it in special hospitals—namely, to prevent further infection among those it has taken upon itself to care for. "There is a certain percentage of infection common to all children's hospitals. If this is deducted from the statistics of a well-planned and well-managed hospital for communicable diseases, the balance to the credit of the children's hospital would be very small." Two or three diseases may coexist in the same patient, of which only one may be obvious. Of all cases of scarlet fever admitted to the Toronto Isolation Hospital in 1912, 14 percent were carriers of diphtheria bacillus on admission. Although it cannot be proved bacteriologically, cases admitted for diphtheria quite possibly carry scarlet fever in mild or unrecognizable form. Scarlet fever patients carrying diphtheria germs are, of course, to be separated from other scarlet fever cases, but to isolate all diphtheria patients as scarlet fever suspects, although the ideal procedure, entails a great amount of unnecessary labor and expense. It suffices, in the author's opinion, to isolate the diphtheria cases which, after careful examination, are pronounced suspicious. Diphtheria and scarlet fever nurses and the maids employed in connection with these two diseases should have separate quarters. Routine swabbing of the throats of all scarlet fever patients, isolation of those carrying diphtheria bacillus, and the administration of an immunizing dose of antitoxin to all patients rules out possibility of post-scarlatinal diphtheria. Methods of cross-infection by contact, direct or indirect, are only to be recognized, and all theories of aerial infection are to be discarded. Medical asepsis first and last is the underlying principle in preventing cross-infection.

Habitations for the Tuberculous. Vincent Hoope. British Jour. of Tuberculosis, July, 1913, pages 177-184.

This article deals with the main principles which should guide the arrangement, planning and construction of habitations for the tuberculous—viz.: sanatoriums, sanatorium hospitals, and residential sanatorium schools. The "sanatoriums" refers to institutions for residential treatment of adult patients with pulmonary tuberculosis whose condition is neither acute nor advanced, whilst the term sanatorium hospitals refers to a special building for the treatment of either acute or advanced cases, or both.

The appendix of the Final Report of the Departmental Committee on Tuberculosis contains a memorandum with regard to sanatoriums, and submits a suggestion for the classification of the sanatorium unit: 1, sanatorium proper; 2, hospital; 3, administration section; 4, power house and laundry. According to such, patients are to be divided, the majority, or 80 percent, in sanatoriums, and acute cases, or 20 percent, in a hospital block. This works a distinct advance, and should lead to interesting developments in planning. The "hospital" is intended for cases requiring nursing, and includes a reception block, where newly arrived cases can be observed, and where those suffering from acute symptoms can receive special treatment. Whether the hospital should or should not accommodate advanced cases is a point undecided.

Children should be in separate buildings, and should have their own block, on their own land, with entrances, paths, and walks as much as possible separated from those attached to the sanatorium. This would be the "residential sanatorium school."

Classification of the sanatorium unit should be as follows:

1. Administration section—a, medical administration; b, domestic administration; c, power house; d, sterilizing station and laboratory; e, laundry; f, residential staff quarters.

2. The hospital—a, reception and acute cases; b, advanced cases.

3. Sanatorium proper—a, patients' room; b, lavatory blocks; c, dining and recreation rooms.

4. Residential sanatorium school—a, home; b, open-air school.

The plan for the hospital might follow the ordinary type of a straight or crescent-shaped building, one room or corridor in thickness, the sanatorium consisting of separate portions connected by covered ways or paths. The hospital can house both sexes, but in the sanatorium it is better to house men and women in distinct blocks. The aspect for the building should be considered on the site, together with data as to the prevailing winds and rainfall. The hospital should face south, but this is not essential for the sanatorium or "school."

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NEWS *of the* HOSPITALS *and* SANATORIUMS

It is proposed by the governing board of the Newburg (Ohio) state hospital for the insane to purchase a 200-acre farm. Governor Cox has been asked to help the project along for the benefit of the state's wards.

The Union Hospital Association of New Ulm, Minn., has instructed architects Alban & Hausler, of St. Paul, to prepare plans for a hospital building, which the Association will erect this fall.

The hospital management of the Colorado Fuel and Iron Company at Pueblo is building an isolation pavilion. It is to be finished inside with a white cement, so that it can be sterilized by live steam turned into the rooms.

The City Council of Portland, Ore., is busy passing an ordinance to prohibit the erection or operation of a tuberculosis hospital within the city limits. It is said that reputable physicians of the city are encouraging the protest. Property owners are behind the move.

An interesting experiment is to be made soon in Wisconsin in regard to the location of tuberculosis sanatoriums in state forest reserves. Dr. J. W. Coon, superintendent of the state tuberculosis sanatorium at Wales, and the state forester are a committee to select a location and a camp is to be built at once.

Work is well under way on the new state hospital for the insane at Larned, Kan. A farm of 640 acres is attached to the hospital, and an attempt will be made to find work for as many of the patients as are in physical and mental condition to participate. The state board of control thinks the farm will be able to raise enough produce to supply the other state institutions.

The City Hospital of Cleveland proposes to establish a training school for hospital orderlies. Many complaints have recently been registered, alleging abuse of patients, nearly all due to untrained and undisciplined orderlies. Director of Charities and Corrections Harris R. Cooley thinks that if these men had a special training and had graded salaries the trouble would end.

St. Louis capitalists may spend a large amount of money developing a mud bath "cure" at Sue Belle Lake, two miles outside of Marshall, Tex. They have recently sent an architect, R. M. Milligan, down to look over the field. Mr. Milligan is to say whether the baths are anything like those of Mudlavia, Ind. It is not stated whether Mr. Milligan is an expert on hydro- or physico-therapy.

Dr. Walter Morritt, for the past twelve years superintendent of Minnequa Hospital of the Colorado Fuel and Iron Company at Pueblo, has been elected superintendent of Bethel Hospital, Colorado Springs. His departure from

Pueblo was very much regretted by a great host of personal and business associates. The physicians and surgeons of Minnequa Hospital gave him a suitable present and many well wishes.

The contagious disease hospital to be connected with the Evanston (Ill.) General Hospital is well under way. Mr. James A. Patten has given the building, to cost approximately $100,000, and the people of the North Shore have raised a like maintenance fund. The hospital is to be built according to the very latest plans for an automatic isolation of the communicable diseases. It is to have 55 beds, but the building is so constructed that additions to increase the capacity can be made at any time at the lowest possible cost.

The Government is contemplating an experimental sanatorium for the study of pellagra at Raleigh, N. C. There were five deaths from that disease in that city in one week recently. A good deal of work is now being done by the Government experts in the South, but the disease is spreading so fast and the attempts to find a cure have been so unsatisfactory that some better organized system to fight it seems demanded. Several southern cities have wanted the sanatorium.

What was formerly the Monroe Street Hospital of Chicago is now, by a recent change of name, the Washington Boulevard Hospital. A block of ground 73x126 feet has been purchased at Washington boulevard and Campbell avenue at a price approximating $100,000. A modern building is being already erected at the new location, the transfer of the property having taken place several months ago, but is only now turned over to the hospital board. The building fund of $55,000 was raised by mortgage on the property.

Atlanta, Ga., is to build a public hospital for crippled children. A campaign to ascertain how many crippled children there are in the state resulted in reports of 704 little cripples. Many prominent people all over the state have signed a call for such a hospital. Several prominent business men have volunteered to serve on the board of trustees, among them Clark Howell, the famous journalist; Messrs. Charles H. Black, Frank Inman, Walter Rich, and J. P. Stephens. Two hundred persons are called on to contribute $100 per year each to maintain the hospital.

It is not very often that one sees an item in the papers like the following, taken from the Louisville *Courier-Journal*.

"To satisfy the claims of twenty creditors and the court costs of Magistrate James S. Keigwin, the equipment of the Jeffersonville City Hospital was sold to B. Frank Sherrick, of Louisville, by Constable George W. Kirk yesterday afternoon for $206. The property was purchased by Mr. Sherrick to be removed to Louisville, where his daughter is identified with the Deaconess Hospital.

"The property sold yesterday represented an original cost of $3,000. The things included all kinds of equipment, consisting of many beds, bedding, blankets, coverlids, sheets, pillowslips, a great deal of table and other linen, dishes, cutlery, silverware, furniture of various kinds, and other articles."

Building, $40,000—Maintenance, $5,000.

The will of Mrs. Julia Lorillard Butterfield, who died recently at Cold Spring, N. Y., devises that a hospital is to be erected at some spot accessible to both Cold Spring and Nelsonville, Putnam County, N. Y., to be known as the Julia L. Butterfield Hospital; $40,000 is given for the construction of the building, $10,000 for its equipment, and $100,000 left in trust for its maintenance. The will also contains a bequest of $20,000 to the association for the Relief of Respectable Aged, Indigent Females, at One Hundred and Fourth street and Amsterdam avenue, New York, and a bequest of $5,000 to the association for the Relief of Crippled Children.

Changes Urged for Insane Hospitals.

The Illinois State Charities Commission, in its annual report just issued, devotes much space to urging radical reforms in the treatment of mental and nervous diseases:

"The commission recommends the establishment in all large centers of population of psychopathic hospitals for the cure and treatment of the acute insanities where the commitment shall be purely voluntary.

"It favors the present state hospitals being made colonies for the strictly chronic class. By this plan the commission says the man in the first stages will seek hospital care, and a larger number will be cured or prevented from deteriorating into incurables.

"The commission says that the psychopathic hospitals should be equipped to look after the patient after he has gone out a convalescent.

"The first hospital of this character should be erected in Cook County. In this recommendation the commission follows those made repeatedly in recent years by it and its predecessors, the State Board of Charities."

Fortunately, as this report is issued, completed plans for a new psychopathic hospital for Cook County lie on the table of the Board of County Commissioners, awaiting the letting of the contract. This hospital is to have a capacity of 230 beds, with architectural arrangements that will permit of expansion to double the capacity.

The Food Problem.

To the Editor of THE MODERN HOSPITAL:

I have your letter of the 15th, and I am very glad to take advantage of your kind invitation to tell you some of my troubles.

The food problem is one of the greatest we have to contend with, and I have given considerable thought to its solution. Perhaps it is greater with us than with any other hospital because we have the dietary laws in force in our institution. It has occurred to me that it would be a feasible and workable proposition to contract with a restaurant in our neighborhood to furnish the necessary meals for the inmates of our hospital, including patients, doctors, nurses, and all help. I believe it would cost us no more to get our food that way than to purchase and prepare the food under our own personal supervision, for, with the restaurant to furnish us the required number of meals daily, we would be able to save the cost of cooks, kitchen force, waitresses, steward, cutlery, dishes, pots, fuel, food supplies, and save the space occupied as kitchens, dining rooms, pantries, store rooms, etc., utilizing that valuable space for other purposes.

The reduction of the help would also save us the expense incidental on their housing, such as laundry, food, light, heat, wear, and tear. Under such an arrangement our people would go out of the building for their meals and would thus enjoy them all the more, being free from the hospital atmosphere, and the food for the patients would be sent to the wards in properly heated conveyers.

What a blessed thing it would be for us interested in the proper care and treatment of our patients to have no other concern than that of attending to the real hospital work instead of having to concern ourselves mostly about the food, as we do now.

Yours very truly,

LOUIS J. FRANK, Superintendent.

NOTES on NURSING

Eight-Hour Law Under Fire.

A legal fight is promised over the California eight-hour law passed by the last Legislature, and which became effective August 10. An organization, including hospital heads, medical staff members, and nurses, has been formed in San Francisco, Oakland, and neighboring towns to resist the law in court.

The state labor commissioner, who is named in the law to direct its enforcement, has sworn out warrants against the heads of hospitals who have refused to recognize it, and the matter will go into court on the question of constitutionality.

The law supposedly was enacted to protect pupil nurses against long hours and exploitation as "under-graduate specials," for whose services the hospitals were paid.

The outcome of the controversy will be of interest as to its legal bearings, because the eight-hour contention is a problem elsewhere besides on the coast.

Perhaps the most important question at issue is whether the nursing body is a trade union or a learned profession. It is highly important that the nurses on the coast make no false move in this controversy to gain a temporary advantage, because there is much at stake that has already been won by them after long years of hard fighting.

Post-Graduate Work in Women's Hospital.

The Free Hospital for Women, Brookline, Mass., announces a post-graduate course for nurses holding a diploma from any recognized school. Board, lodging, washing, and an allowance of $10 per month to cover the cost of the uniforms and other incidentals is given. This allowance is by no means intended as compensation for the services rendered, the experience being considered sufficient equivalent, but is simply to enable the nurse to avail herself of the post-graduate course without expense during her stay in the hospital.

The course is absolutely practical, the nurse's time being devoted to an actual application of the most approved methods of surgical nursing: the preparation of patients for operation and the cleansing and sterilization of instruments and dressings; the care of the operating room and assistance at operations, both plastic and abdominal; practical work in wards, including the care of patients after surgical intervention, covering the whole field from simple curettage to vaginal and abdominal hysterectomies. In connection with the out-patient department each nurse is instructed in the arrangement of patients for office examinations and the treatment of all minor diseases of women; also the preparation of office instruments and dressings, etc. The course gives ample time to become perfected in the care of any gynecological case from the time of the first examination at the surgeon's office to the subsequent operation, convalescence, and ultimate recovery. There are lectures by the attending staff, recitations, and practical demonstrations in gynecological work throughout the course. At the conclusion of the term of service a diploma is given, if the nurse passes the examination and her work and conduct have been satisfactory.

District Nursing in Jerusalem.

District nursing in Jerusalem seems at once to bring the old biblical city into very close touch with the most modern charities of today, says *Public Health Nurse Quarterly*. For a moment it almost seems as incongruous as electric cars in Bethlehem—but when we think of the great poverty and dirt and suffering in the ancient city of the Jews, not only in biblical days, but even more so in the present, we realize what a splendid thing it is that a Jewish society of New York City, The American Daughters of Zion, should have awakened to the need and have sent two trained visiting nurses from this country to work among the poor and sick Jews in Jerusalem. Miss Rose Kaplan, a Mt. Sinai Hospital nurse, is in charge, and Miss Rae Landy, of Lakeside, is assistant. The following extract from a letter recently received from Miss Landy will be of interest to our readers:

"Miss Kaplan and I are doing district nursing in Jerusalem. It is a very new thing in Jerusalem, and we are having some difficulty in becoming established, but I am sure things will adjust themselves in the end. We rented part of a house, and, not being able to get ready-made furniture, we are having everything made. I am sure the work is going to be very interesting; there is a great field here and plenty to do. The conditions are perfectly distressing. I never imagined people could be so poor and miserable."

Where Shall Probationers Come From?

One of the problems of hospital administration handed down from Dr. Howell's question box on Friday morning at Boston touched the quick of the nursing situation, but, since this question can be settled best by the airing of the different views, the question is published in this column:

THE QUESTION.

Now that the various states of the Union are passing laws governing training schools and the practice of nursing, and are establishing by these laws the minimum preliminary educational qualifications, does it not seem just that they should establish a lower standard than one year in high school? In view of the fact that, owing to the great increase in training schools, there are not enough women with high school education to fill all the positions, and in view of the fact that many women with common school education make excellent nurses, why would it not be better for the states to provide a minimum requirement of a common school education?

This would give the schools a wider range of selection and enable them to train more nurses. Each school could fix its own standard of preliminary education, providing it was equal to or higher than the standard established by law.

ANSWER BY DR. DREW, OF THE WORCESTER CITY HOSPITAL.

This is not a question that is easy to handle, because it has been handled so much that it generates heat. I do not like the form of the question, because it reads as if the man who asked the question was telling how to answer it.

For many years the medical profession, as represented by state and national medical societies, has tried annually and strenuously to raise the bars higher and higher to keep out of the medical profession applicants who have not enjoyed the advantages of a liberal preliminary education.

For a comparatively few years the nursing profession, as represented by state organizations of nurses, has tried to bar out of the profession of nursing those who have not had at least a preliminary high school education. In

the one profession an academic college degree has been the standard hoped for; the other profession has hoped for a standard not lower than that represented by a high school diploma. The object of the advocates of higher standards in both professions has been the public good and the exaltation of the profession. While it is granted that a college degree is no guarantee that the man has clean hands and a pure heart, it is admitted that the holder of such a degree has at least been associated with and presumably influenced by scholarly and altruistic men. So it is held regarding a high school diploma, which does not guarantee that the girl is sympathetic or tactful, or even honest. Many experienced educators believe that a girl with less than a high school education cannot grasp the principles nor digest the instruction which good schools try to represent and teach. A few of the more favored hospitals, with means to attain approximately their high ideals, have no difficulty in finding a sufficient number of candidates with a high school diploma. It is often assumed in discussion that the reason all schools do not have plenty of high school and college-bred girls on the waiting list is because their standards are low. It seems probable that, if all schools were equally heavily endowed and equally well equipped, the shortage would simply be more evenly distributed.

It is against the evidence to assume that there are enough high school graduates to supply the demand of the fast multiplying hospitals and the fast growing demand for nurses in social service and other kindred lines of work. To use a much worked quotation, "It is a condition, not a theory," that we are facing. In spite of the many hospitals, fast growing in numbers, Mr. Bradley told us in his excellent paper of Tuesday that 87 percent of the sickness in America is in the home, and the evidence seems to prove that the homes of the self-respecting middle class are woefully short of nurses.

I regret much that the thoughtful papers of Mr. Bradley and Miss Riddle could not have had a free discussion on Tuesday afternoon. There are many members of this association who would like to hear the evidence and the arguments for and against the classification and grading of nurses, which is very closely related to this question of preliminary education. Whether we agree with the high idealism of Miss Riddle or with the matter-of-fact report of the majority of the committee, this association as a whole, in my opinion, suffers a distinct loss in the side-tracking or the postponement of the discussion of those two valuable papers read Tuesday afternoon.

Indeed, I was so much impressed that I dreamed of those papers Tuesday night. Things were badly mixed, as they often are in dreams. It seems as if I were sitting with this association in the same hall, but, instead of the readers of Tuesday afternoon, a handsome officer in full uniform from the United States army held the floor. His paper was a plea for higher education in the army. His argument was that the dearth of applicants for the army is due to the fact that poorly educated men are accepted. "Keep out the uneducated and there will be no lack of educated applicants," was his theme. His slogan was, "The best is none too good."

In my dream we were so wildly enthusiastic under the spell of his eloquence that we voted unanimously that no one should be admitted to the army who had not one year at least at West Point.

Judging from my own experience, I see no need of legislation to fix a standard of education for probationers. I am inclined to think that a training school committee of the trustees and the superintendent of nurses and the superintendent of the hospital are, as a rule, fairly well qualified to judge, after a six months' probationary period, who are and who are not fit to continue in training.

Again, my experience and observation force me to believe that the question of a college or a high school education depends very often on the financial condition of the parents. I know many men holding positions of honor and influence in the commonwealth who went to work directly after leaving the common school. I do not doubt that there are thousands of bright girls, well fitted for all the practical duties of nursing, that are forced by circumstances to go to work directly after leaving the grammar grade.

We need many broadly educated nurses for teachers in our hospitals, for leaders in social service and for private nursing in many cultured homes, but I suspect we are laying too much stress on education as obtained in the schools and attaching too little importance to constitutional and temperamental fitness, and that education which is obtained in the school of adversity and necessity for self-support. Lest I be misunderstood, let me say that I have no grouch against the high schools, nor any higher institution of learning. I wish it were possible that every son and daughter of our great country could have broad educational opportunities as well as good food and good clothes and time to play. But because thousands of boys and girls with keen perceptions, sound nervous systems, and honest ambitions for self-betterment are denied such opportunities and such luxuries, I see no good reason why we should shut the door of opportunity to him or her who is not born to be fed with a silver spoon.

My plan would be to judge each case on its merits. Secure a personal interview with the candidate if possible. If the superintendent of nurses is in doubt, the superintendent of the hospital should also see the candidate, then submit the application in the candidate's own handwriting to the trustees, or at least to a committee of the trustees, with such recommendations and evidence of education and fitness as the candidate may be able to furnish. If the superintendent of nurses approves and the trustees concur, open the door of opportunity, give the candidate a chance to show her fitness, whether she has ever entered high school or not, providing she did not drop out of school from choice rather than necessity.

To my mind the time to weed out the unfit is during the probationary period. A good instructor of probationers and a competent and fair-minded superintendent of nurses should be able to decide during a six months' trial whether the girl is possible or not. In many cases the question is clearly settled in less than three months. If there is a doubt, a longer trial should be given. If a competent superintendent of nurses is not supported because of misdirected sympathy or because the nurse has a pull, woe to the school. If the superintendent of nurses is not fair-minded and competent, woe again to the school.

The graduating exercises of the Albany (N. Y.) hospital, held September 17, was accompanied by the annual ceremony of tree planting. Twenty-four young women were in the class. The interns of the hospital acted as ushers, the entertainment being held in the grounds of the nurses' home. Each class that graduates at Albany plants its own class tree amid much ceremony. It is a pretty sentiment.

Stuart Circle Hospital, of Richmond, Va., has added $50,000 to its capital of $50,000. The increase will be devoted to new buildings.

QUERIES *and* ANSWERS

Opaque Transoms.

To the Editor of THE MODERN HOSPITAL:

Is the opaque transom a good solution of the problem of night lights in the corridor disturbing patients, and, if so, of what should it be made?

The best solution of this problem is to put a heavy green or black Holland shade on the glass transom. The shade should lap over the transom frame on all sides, and should roll from the bottom, with catch pulley at the top through which the cord can be manipulated. With this device the transom can be opened or closed, and the always tight cord will keep the shade from flapping. The shade can be rolled during the day when light is needed, and can be drawn at night to shut out the electric light.

Self-Closing Faucets.

To the Editor of THE MODERN HOSPITAL:

Which is preferable, foot, knee, or elbow action for faucets in the operating room, and why?

They are all equally convenient for the surgeons if they are properly placed; some surgeons prefer one and some another, according to whichever they have been accustomed. Until recently the foot pedal was undesirable owing to the fussiness of the brass or nickel work on the floor and the difficulty of cleaning around it. Recently plumbers have overcome this by putting everything but the tread in a box and setting the tread on top. Both knee and elbow action are now made with self-closing spring, and this is important, because the water that comes to those faucets is sterile, and it costs money to sterilize water, though most surgeons ignore this waste and let the water run sometimes for hours. Really every faucet in the house should be self-closing, because it costs money even to pump water to the house tank.

Treatment of Maple Floors.

To the Editor of THE MODERN HOSPITAL:

What is the best way to treat maple floors so they will not darken, beginning when they are first laid?

A. T. L., Duluth, Minn.

In the first place, they should be kept clean, and workmen should not be permitted to walk on them and grind in the dirt with their shoes. Mr. H. E. Webster, the new vice-president of the American Hospital Association and superintendent of the Royal Victoria Hospital, Montreal, published this recipe in the *Hospital* (London) three years ago:

"New floors treat with oil, then shellac, and afterwards two coats of floor varnish. When thoroughly dry, wax with the following preparation: ½ pound beeswax, 1 ounce resin, 1 ounce pulverized alum, 2 pints turpentine, 1 tablespoonful Japan (dryer) turpentine. Mix the wax and resin over a fire, then remove from the heat. Add your turpentine and Japan, and your alum last. Then let it stand until it forms a paste. Apply the wax with waste and then brush."

If the floors are old and already darkened, they will have to be scraped or thoroughly scrubbed.

Vacuum Bottles in Hospitals.

To the Editor of THE MODERN HOSPITAL:

Can you tell me something about the use of vacuum bottles in hospitals? We are thinking about placing them in our private rooms for keeping ice-cold water for patients, so that nurses will not have to do so much running; and we are also thinking about using them for normal salt irrigations according to the Greensfelder method. Some of our doctors doubt our ability to sterilize them properly because they break when boiling water is poured into them.

W. B. T.

There is no doubt that the vacuum bottle must come into common use in hospitals, not only for patients in private rooms, but for patients in the wards. If a container that costs $5, and that will last until it is broken by violence, will save a nurse half a dozen or a dozen trips a day of anywhere from fifty to two or three hundred feet to a water cooler, it seems to me that there is hardly an argument against putting it in, even for free patients, and even if one eliminates the comfort to the patients in having cold water at any time they want it rather than whenever the nurse has time to go and get it for them. The use of the vacuum bottle will prevent the absorption of an immense number of microorganisms and dirt of all sorts from the sick room, incident to the use of an open-mouth vessel, such as a pitcher. We will discuss the sterilization of these bottles presently.

The Greensfelder irrigating bottle is also a device that is coming into very common use, and will undoubtedly be universal in a short time, because the temperature of solutions used for transfusions and irrigations must be maintained within a degree or two for several hours, and, when one compares it with the old percolator or irrigator surrounded by hot-water bottles to maintain the temperature and having a wide open mouth, there is hardly any argument.

Another use for vacuum bottles is for keeping formula feedings for infants and others who must be fed on warm fluids. Infants' feedings in children's hospitals are generally prepared for twenty-four hours at one time and kept on ice in four-, six- or eight-ounce bottles, and those who have had experience know how difficult it is to get nurses to warm the feedings properly in these small bottles for each feeding. The time is coming shortly when each child's feeding will be kept separately in a vacuum bottle large enough to hold the twenty-four hours' feedings and maintained at an even temperature throughout the time. The use of these vacuum bottles for this purpose will very greatly simplify the nurse's work and add immeasurably to the efficiency of the feeding.

It is true, vacuum bottles cannot be sterilized with boiling water, because the glass does break; but, if the work is done in a systematic way and by the following process, it can be done very quickly and very effectively: Put into each vacuum bottle of, say, a pint or quart in size a gill or more of 80-percent alcohol; shake well, so that the alcohol reaches every part of the inside of the bottle; leave the alcohol in it for, say, half an hour, and shake the bottle occasionally during this time. At the end of the time pour off the alcohol into its own bottle and rinse out the vacuum bottle with sterile or recently boiled water, but let this water be not warmer than 140 degrees when it is put into the vacuum bottle; then the bottle will not break. The alcohol can be used any number of times, and the nurse engaged in sterilizing these bottles can perform the service for any number of them in half an hour. This will be true of all the vacuum bottles used in the house.

JOHN A. HORNSBY.

NEW EQUIPMENT

Typhoid Stool Sterilizer.

For years an attempt has been made to meet the demands of the medical profession for a sterilizer that would destroy the micro-organisms that are a part of the contents of bed pans and urinals, and at the same time clean those utensils so that they also would be perfectly sterile.

Manufacturers have been busy trying to evolve a typhoid stool sterilizer, and it will be interesting to summarize their results up to the present time. Some of the illustrations accompanying this article indicate the "state of the art," so to speak.

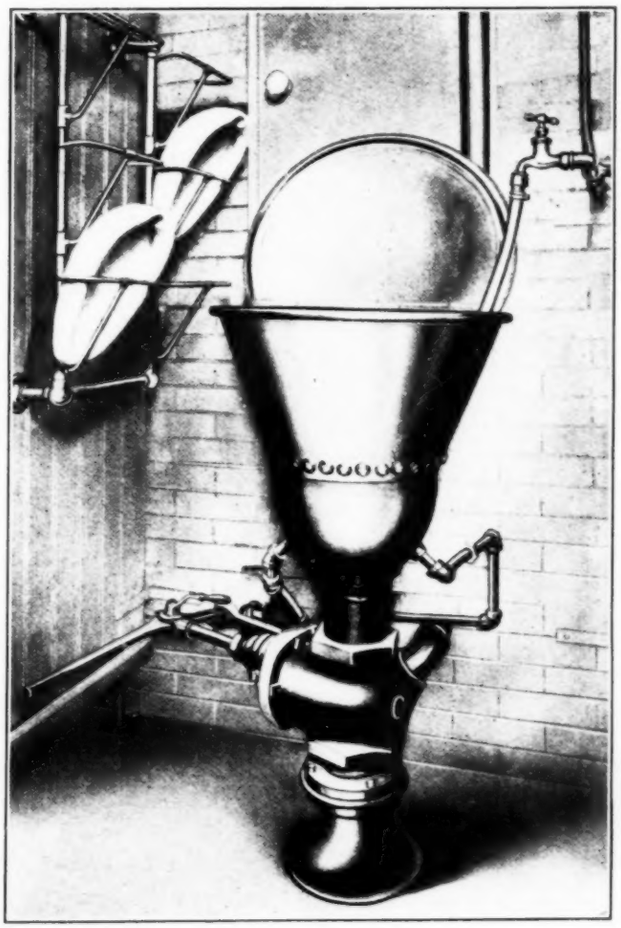

Fig. 1. E. B. Badger Company sterilizer.

Fig. 1 is the sterilizer of the E. B. Badger Company. This is a bell-shaped hopper, with a lid closed by hand and raised by hand. No attempt is made to retain steam or odors. The pan is washed with a hose, as shown in the illustration. The steam is then turned into the jacketed compartment and the water in the chamber is boiled. It is claimed for this sterilizer that no odors can escape when the lid is closed, but the Massachusetts General Hospital, which has been using it, makes no report to this effect and performs the work of sterilizing and cleaning by two processes. The contents are boiled in the hopper and the pan is washed in another utensil.

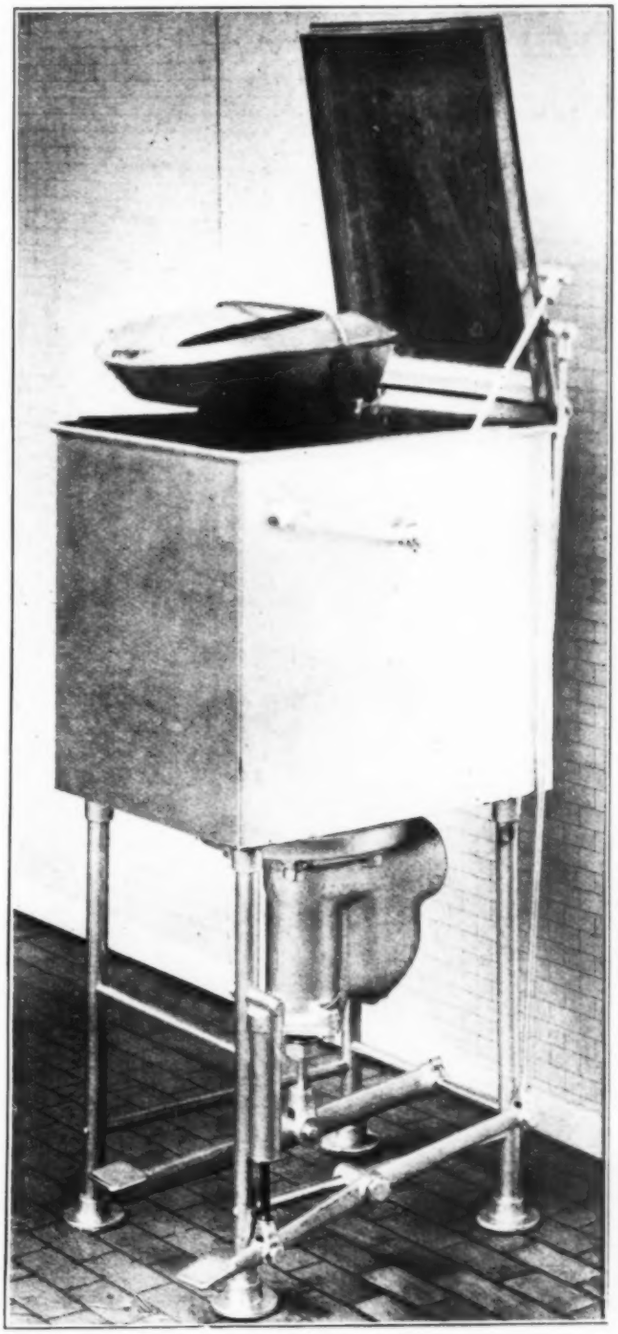

Fig. 2. Wilmot Castle sterilizer.

Fig. 2 is the Wilmot Castle sterilizer, which is practically a cube in shape. The lid is raised by foot pedal, and the bed pan is set into a holder arrangement and fastened there. When the lid is closed, the lever that operates it turns the pan upside down. The bottom of the chamber is dished to permit drainage, and there is a steam-jacketed bottom, so that water and contents of the chamber are boiled. The interior of the chamber is fitted

with smoothly finished spray pipes and adjustable nozzle.

Figs. 3 and 4 represent the device made by the Hospital Supply Company and from a design submitted by Dr. John A. Hornsby, then superintendent of Michael Reese Hospital. This device is a cylindrical hopper, with dished double-jacketed bottom, the jacket containing steam coils. The rack inside, on which the utensil is hung, is fixed in place, and at the point of this rack is a jet connecting with the hot water and also with the live steam. A bed pan or urinal may be hung on this rack, with the jet point projecting into the utensil, and the utensil is then washed out with hot water, the contents falling into the boiling water; the utensil is thoroughly cleaned, a jet of live steam is substituted for the hot water jet, and the utensil is in this way sterilized. The lid is gasketed and set into an asbestos seat. There is a clamp that fastens the lid down to prevent the escape of gases or odors or steam. At the top of the hopper is an exhaust pipe, as shown in the cut. This escapes into a roof vent, with a condensation pipe below, letting into the trap. The lever that opens the hopper for the escape of the sterilized contents is hand-worked. The escape pipe at the top of the hopper makes it impossible for steam to be introduced under any considerable amount of pressure, but experience has shown that two or three pounds of steam can be produced. Dr. Hornsby has designed a modification of this sterilizer for the new Cook County Hospital, as shown in Fig. 4. This sterilizer will take care of six bed pans or urinals at one time. It is believed that this hopper will supplant the clinic sink for cleaning bed pans, urinals, and other utensils besides those that are known to be infected with the organisms of specific diseases, such as typhoid and the gastrointestinal fevers.

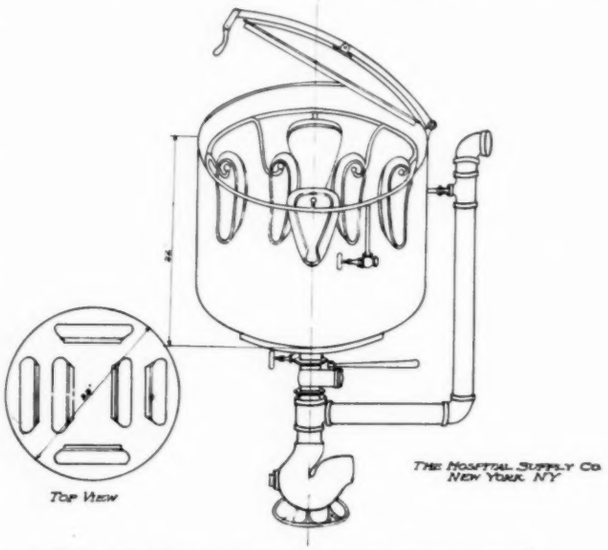

Fig. 4. Modification of Hospital Supply Company sterilizer.

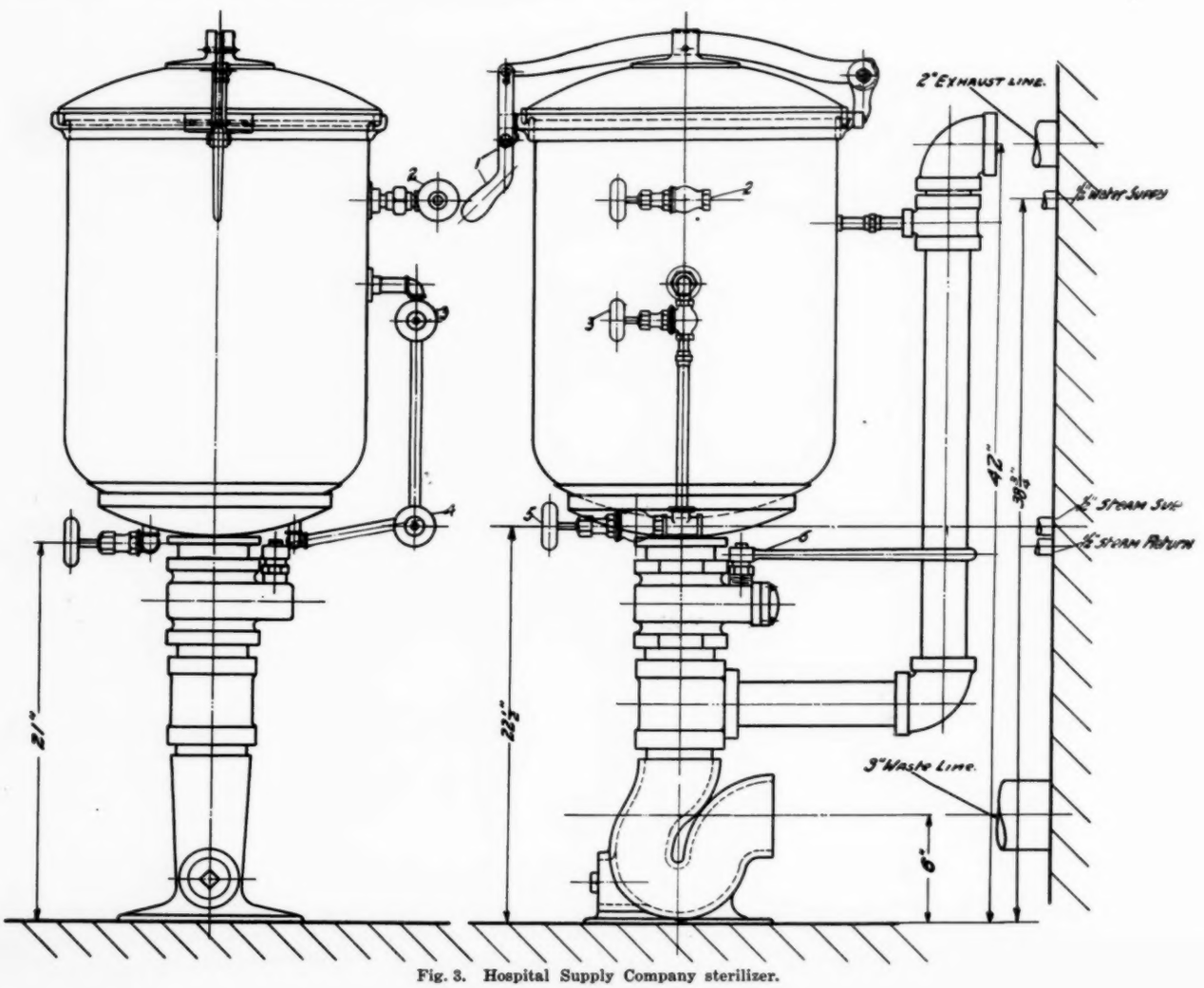

Fig. 3. Hospital Supply Company sterilizer.